

#8 / Seq / B

RECEIVED

APR 11 2002

TECH CENTER 1600/2900

SEQUENCE LISTING

<110> Ausubel, Frederick M.
Rahme, Laurence G.

<120> VIRULENCE-ASSOCIATED NUCLEIC ACID
SEQUENCES AND USES THEREOF

<130> 00786/361003

<140> US 09/975,719

<141> 2001-10-10

<150> US 09/199,637

<151> 1998-11-25

<150> US 60/066,517

<151> 1997-11-25

<160> 437

<170> FastSEQ for Windows Version 4.0

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<211> 42235

<212> DNA

<213> Pseudomonas aeruginosa

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<221> variation

<222> (1)...(42235)

<223> N is any nucleic acid.

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<212> DNA

<213> *Pseudomonas aeruginosa*

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<212> PRT

<213> *Pseudomonas aeruginosa*

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 Thr Asn Ser Asn Ser Ala Leu Asn Ser Ile Leu Ser Gly Gly Val Ser
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 Asp Ile Arg Gln Trp Met Asn Lys Leu Tyr Gly Glu Ala Phe Ala Ala
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 <213> *Pseudomonas aeruginosa*

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Pro Trp Gly Ser Ile Ser Ser Leu Leu Val Glu His Ala Ala Arg Val
50 55 60
Ser Ala Gln Ala Arg Pro Ala Gln Arg Arg Arg Gly Leu Val Gln
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Val Cys Cys Cys Met Ser Gly Ser Arg Ala Val Ile Asp Leu Ala Ala
85 90 95
Leu Glu Phe Ile Val Asp Arg Gln Leu Leu Ile Glu Met His Cys Asp
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Pro Arg Thr Trp Leu His Val Asp Gly Gly Glu Gly Leu Pro Val Gln
115 120 125
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Val Glu Gly Arg Val Ala Val Gly Ser Gly Arg Pro Glu Ala Gly Ala
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 ggcacccctg tcgggatcga ttgggcgccc cagcgtttgc ctggcatcga ggagcagccg 720
 gccacggctg ttgcctatcg agctggtcgc acctcgctcc cagacgtcga gcatgttggc 780
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<210> 11
 <211> 310
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 11
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<210> 13
<211> 1046
<212> PRT
<213> Pseudomonas aeruginosa

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20 25 30
Gly Arg Gln Arg Ser Arg Pro Gly Thr Gly Leu His His Arg Val Pro
35 40 45
Leu Leu Pro Ala Ser Pro Val Arg His Ala Gly Arg Thr His Gly Gly
50 55 60
Leu Leu Met Gly Phe Phe Gln Thr Leu Leu Arg Gly Arg Thr Gln Pro
65 70 75 80
Gln Ser Val Pro Ala Asp Ala Pro Glu Asp Ser Gly Ala Leu Asp Val
85 90 95
Ala Ala Ala Glu Glu Ala Thr Glu Arg Tyr Leu Ala Arg Leu Ala Ala

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Met	Gly	Ile	Pro	Leu	Pro	Asn	Thr	Gly	Ser	Lys	Asn	Gly	Ala	Thr	Gln		
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Ala	Glu	Ala	Ser	Arg	Leu	Tyr	Asp	His	Asp	Pro	Ser	Phe	Val	Asp	Leu		
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Leu	Pro	Trp	Ala	Glu	Tyr	Leu	Pro	Asp	Glu	Gln	Val	Met	Leu	Leu	Glu		
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Asp	Gly	Arg	Ser	Arg	Ala	Ala	Phe	Phe	Glu	Leu	Val	Pro	Leu	Gly	Thr		
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Glu	Gly	Arg	Asp	Pro	Asn	Trp	Met	Gln	Asn	Ala	Arg	Asp	Ala	Leu	Lys		
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Glu	Ala	Leu	Gln	Asn	Ser	Phe	Asp	Glu	His	Glu	Thr	Ser	Pro	Trp	Ile		
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Val	Gln	Phe	Tyr	Ala	Gln	Asp	Glu	Ile	Ser	Trp	Asp	Asn	Phe	Gln	Glu		
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Glu	Met	Tyr	Leu	Ala	Leu	Met	Lys	His	His	Leu	Glu	Gly	Ile	Ser	Lys		
			245					250					255				
Pro	Gly	Gly	Leu	Phe	Val	Asp	Thr	Ala	Val	Ser	Lys	Leu	Pro	Trp	Arg		
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Glu	Asp	Ala	Gln	Ile	Arg	Gly	Gln	Asp	Pro	Ala	Ala	Tyr	Leu	Lys	Ser		
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Ile	Cys	Glu	Arg	Ile	Gln	Gly	Gly	Leu	Ala	Asn	Ala	Gly	Ile	Val	Ala		
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Ser	Arg	Met	Gly	Gly	Gln	Glu	Ile	Arg	Asn	Trp	Leu	Ile	Arg	Trp	Phe		
			325					330					335				
Asn	Pro	His	Pro	Asp	His	Leu	Gly	Gln	Ala	Glu	Ala	Asp	Leu	Arg	Arg		
		340					345					350					
Phe	Tyr	Glu	Leu	Val	Cys	Arg	Pro	Asp	Glu	Pro	Ile	Leu	Gln	Asp	Glu		
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Leu	Pro	Leu	Ala	Asp	Gly	Thr	Asp	Phe	Ser	Gln	Asn	Leu	Phe	Tyr	Arg		
		370			375						380						
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		385			390					395					400		
Pro	His	Arg	Val	Ile	Val	Val	Asp	Gln	Leu	Asn	Lys	Ala	Pro	Leu	Thr		
			405					410					415				
Gly	His	Phe	Thr	Gly	Glu	Thr	Leu	Lys	Gly	Asp	Gly	Leu	Asn	Ala	Leu		
		420					425					430					
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		435				440					445						
Thr	Pro	Gln	Asp	Met	Leu	Glu	Gly	His	Leu	Gln	Gln	Leu	Ser	Lys	Lys		
		450			455					460							
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		465			470					475					480		
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			485					490					495				
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Glu	Pro	Gln	Asn	Glu	Val	Gly	Pro	Leu	Asn	Ser	Tyr	Leu	Arg	Trp	Leu		
		530			535					540							
Pro	Ser	Asn	Phe	Asp	Pro	Asn	Glu	Lys	Arg	Ala	Leu	Glu	Trp	Tyr	Thr		
		545			550				555						560		
Gln	Met	Met	Phe	Ala	Gln	His	Ile	Ala	Asn	Leu	Ser	Pro	Ile	Trp	Gly		
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Arg Thr Thr Gly Thr Gly His Pro Gly Phe Thr Leu Phe Asn Arg Gly
 580 585 590
 Gly Ala Pro Leu Thr Phe Asp Pro Phe Asn Lys Leu Asp Arg Gln Met
 595 600 605
 Asn Ala His Gly Phe Ile Phe Gly Pro Thr Gly Ser Gly Lys Ser Ala
 610 615 620
 Ser Leu Thr Asn Leu Ile Cys Gln Met Leu Ala Met Tyr Leu Pro Arg
 625 630 635 640
 Met Phe Val Ala Glu Ala Gly Asn Ser Phe Gly Leu Leu Ala Asp Leu
 645 650 655
 Ala Lys Arg Phe Gly Leu Ser Val His Arg Val Arg Leu Ala Pro Gly
 660 665 670
 Ser Gly Val Ser Leu Ala Pro Phe Ala Asp Ala Ile Lys Leu Val Glu
 675 680 685
 Ser Pro Asp Gln Val Lys Val Leu Asp Ala Glu Asp Ile Glu Ala Ser
 690 695 700
 Asp Ser Val Gln Gly Ser Lys Ala Asp Leu Glu Asp Asp Gln Arg Asp
 705 710 715 720
 Ile Leu Gly Glu Met Glu Ile Val Ala Arg Leu Met Ile Thr Gly Gly
 725 730 735
 Glu Glu Lys Glu Asp Ala Arg Leu Thr Arg Ala Asp Arg Ser Ala Val
 740 745 750
 Arg Gln Ala Ile Leu Ala Ala Ala Arg Thr Cys Ala Ala Ala Asn Arg
 755 760 765
 Thr Val Leu Thr Gln Asp Val Arg Asp Ala Leu Tyr Glu Ala Ser Arg
 770 775 780
 Ser Asp Ser Thr Ala Pro Glu Arg Arg Ala Arg Ile Ala Glu Met Ala
 785 790 795 800
 Glu Ala Met Gln Met Phe Cys Met Gly Ala Asp Gly Glu Met Phe Asn
 805 810 815
 Arg Glu Gly Thr Pro Trp Pro Glu Ala Asp Leu Thr Val Val Asp Phe
 820 825 830
 Ala Thr Tyr Ala Arg Glu Gly Tyr Ala Ala Gln Leu Gly Ile Ala Tyr
 835 840 845
 Ile Ser Leu Leu Asn Thr Val Asn Asn Ile Ala Glu Arg Asp Gln Phe
 850 855 860
 Lys Gly Arg Pro Ile Val Lys Ile Thr Asp Glu Gly His Ile Ile Thr
 865 870 875 880
 Lys His Pro Leu Leu Leu Pro Tyr Ala Met Lys Ile Thr Lys Met Trp
 885 890 895
 Arg Lys Leu Gly Ala Trp Phe Trp Leu Ala Thr Gln Asn Ile Asp Asp
 900 905 910
 Ile Pro Ala Ser Gly Ala Pro Met Leu Asn Met Ile Glu Trp Trp Leu
 915 920 925
 Cys Leu Asn Met Pro Pro Asp Glu Val Glu Lys Ile Ser Arg Phe Arg
 930 935 940
 Glu Leu Ser Pro Ala Gln Lys Ser Met Met Leu Ser Ala Arg Lys Glu
 945 950 955 960
 Ser Gly Lys Phe Thr Glu Gly Val Leu Leu Ala Lys Gly Lys Glu Tyr
 965 970 975
 Leu Val Arg Val Val Pro Pro Ser Leu Tyr Leu Ala Leu Ala Met Thr
 980 985 990
 Glu Asn Glu Glu Lys Asn Gln Arg Tyr Asn Ile Met Gln Ala Thr Gly
 995 1000 1005
 Cys Asp Glu Leu Glu Ala Ala Leu Gln Val Ala Ala Asp Leu Asp Lys
 1010 1015 1020
 Ala Arg Gly Leu Pro Pro Phe Pro Ile Val Phe Pro Asp Gln Pro Ala
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 Val Glu Cys Gln Asp Glu

<210> 14
 <211> 657
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 14
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 cgcattgaaa gaagccctgc agaactcctt cgacgagcac gaaacctcac cctggattgt 180
 ccagttctac gcccaggacg agatcagctg ggacaatttc caggagcagt tgaggcagta 240
 cgtccatcct cgagcgcgag gatcggcctt cagcgagatg tacctggcgc tcatgaagca 300
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 ggatgcgcag attcgcggac aggacccggc gccgtacctg aaatccatct gcgagcgtat 480
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 gaactggttg atccgctggt tcaacccgca cccggatcac ctccggccagg ccgagggcgga 600
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<210> 15
 <211> 218
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 15
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 20 25 30
 Gln Leu Asp Ala Glu Arg Pro Gly Arg Ile Glu Arg Ser Pro Ala Glu
 35 40 45
 Leu Leu Arg Arg Ala Arg Asn Leu Thr Leu Asp Cys Pro Val Leu Arg
 50 55 60
 Pro Gly Arg Asp Gln Leu Gly Gln Phe Pro Gly Ala Val Glu Ala Val
 65 70 75 80
 Arg Pro Ser Ser Ser Ala Arg Ile Gly Leu Gln Arg Asp Val Pro Gly
 85 90 95
 Ala His Glu Ala Ser Pro Gly Gly His Phe Glu Ala Gly Arg Thr Val
 100 105 110
 Arg Arg His Arg Arg Gln Gln Ala Ala Leu Ala Arg Thr Thr Ala Pro
 115 120 125
 Arg Ala Asp Gly Arg Leu Pro Pro Asp Pro Gln Gly Gly Cys Ala Asp
 130 135 140
 Ser Arg Thr Gly Pro Gly Gly Val Pro Glu Ile His Leu Arg Ala Tyr
 145 150 155 160
 Pro Arg Arg Pro Gly Glu Arg Arg His Arg Arg Phe Ala His Gly Arg
 165 170 175
 Thr Gly Asp Gln Glu Leu Val Asp Pro Leu Val Gln Pro Ala Pro Gly
 180 185 190
 Ser Pro Arg Pro Gly Arg Gly Gly Pro Thr Ser Leu Leu Arg Thr Gly
 195 200 205
 Met Pro Ser Gly Arg Thr Asp Pro Ala Gly
 210 215

<210> 16
 <211> 435

<212> DNA
 <213> Pseudomonas aeruginosa

<400> 16
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 cctgatctcc tgtccgcca tgcgcgaagc gacgatgccg gcgttcgcca ggccgccttg 120
 gatacgtctg cagatggatt tcaggtacgc cgccgggtcc tgtccgcgaa tctgcgcac 180
 ctcttgcgg atccggcggg agacgaccat ccgcacgcgg cgctgttgct ctcgccaggg 240
 cagcttgctg acggcgggtg cgacgaacag tccgcccggc ttcgaaatgc cctccagggtg 300
 atgcttcatg agcgccagggt acatctcgct gaaggccgat cctcgcgctc gaggatggac 360
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 gacaatccag ggtga 435

<210> 17
 <211> 144
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 17
 Val Arg Leu Gly Leu Ala Glu Val Ile Arg Val Arg Val Glu Pro Ala
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 Asp Gln Pro Val Pro Asp Leu Leu Ser Ala His Ala Arg Ser Asp Asp
 20 25 30
 Ala Gly Val Arg Gln Ala Ala Leu Asp Thr Leu Ala Asp Gly Phe Gln
 35 40 45
 Val Arg Arg Arg Val Leu Ser Ala Asn Leu Arg Ile Leu Leu Ala Asp
 50 55 60
 Pro Ala Val Asp Asp His Pro His Ala Ala Leu Leu Ser Ser Pro Gly
 65 70 75 80
 Gln Leu Ala Asp Gly Gly Val Asp Glu Gln Ser Ala Arg Leu Arg Asn
 85 90 95
 Ala Leu Gln Val Met Leu His Glu Arg Gln Val His Leu Ala Glu Gly
 100 105 110
 Arg Ser Ser Arg Ser Arg Met Asp Val Leu Pro Gln Leu Leu Leu Glu
 115 120 125
 Ile Val Pro Ala Asp Leu Val Leu Gly Val Glu Leu Asp Asn Pro Gly
 130 135 140

<210> 18
 <211> 588
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 18
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 caggccggcg ccgagcagta cgttgctcag ggtgatgcag cgttcctcca actgggtatg 120
 gtcgcggccg cgcacgaaca gagcgatcgc tccgcgatag agcttgtgct cccggccgat 180
 caggcgctga acgggtggcca cgtcctcgcg ggtgtggatc gaggcctggg tgtcaccaac 240
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 ggtgatgcac agcagcgtgt cctcgggcat tcgatcgaac agggcgttga ggccatcgcc 360
 tttgagcgtc tcgccggtga agtggcctgt cagcggcgct ttgttcaact ggtcgaccac 420
 aatcactcgg tcgggcatgg catcgaagag ccatacgccc tgggtggcat cggaacagg 480
 ctgccgatag aacaggttct gggagaagtc agtgccgtcg gccagtggca attcatcctg 540
 caggatcggg tcgtccggac ggcataccag ttcgtagaag cgacgtag 588

<210> 19
 <211> 195
 <212> PRT

<213> Pseudomonas aeruginosa

<400> 19

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 1          5          10          15
Phe Asp Arg His Gln Ala Gly Ala Glu Gln Tyr Val Ala Gln Gly Asp
 20          25          30
Ala Ala Phe Leu Gln Leu Gly Met Val Ala Ala Ala His Glu Gln Ser
 35          40          45
Asp Arg Ser Ala Ile Glu Leu Val Leu Pro Ala Asp Gln Ala Ser Asn
 50          55          60
Gly Gly His Val Leu Ala Gly Val Asp Arg Gly Leu Gly Val Thr Asn
 65          70          75          80
Gly Leu Phe Arg Glu Leu Leu Gln Met Pro Phe Gln His Val Leu Arg
 85          90          95
Arg His Asp His Gly Asp Ala Gln Gln Arg Val Leu Gly His Ser Ile
100          105          110
Glu Gln Gly Val Glu Ala Ile Ala Phe Glu Arg Leu Ala Gly Glu Val
115          120          125
Ala Cys Gln Arg Arg Phe Val Gln Leu Val Asp His Asn His Ser Val
130          135          140
Arg His Gly Ile Glu Glu Pro Tyr Ala Leu Gly Gly Ile Gly Asn Arg
145          150          155          160
Leu Pro Ile Glu Gln Val Leu Gly Glu Val Ser Ala Val Gly Gln Trp
165          170          175
Gln Phe Ile Leu Gln Asp Arg Phe Val Arg Thr Ala Tyr Gln Phe Val
180          185          190
Glu Ala Thr
195
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<210> 20

<211> 330

<212> DNA

<213> Pseudomonas aeruginosa

<400> 20

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tcttgccggcg tcacgaccat ggtgatgcac agcagcgtgt cctcgggcat tcgatcgaac      180
agggcggttga ggccatcgcc tttgagcgtc tcgccggtga agtggcctgt cagcggcgct      240
ttgttcaact ggtcgaccac aatcactcgg tcgggcatgg catcgaagag ccatacgccc      300
tgggtggcat cggaacagg ctgccgatag      330
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<210> 21

<211> 109

<212> PRT

<213> Pseudomonas aeruginosa

<400> 21

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Arg Val Trp Ile Glu Ala Trp Val Ser Pro Thr Ala Phe Phe Glu Ser
 20          25          30
Cys Cys Arg Cys Pro Ser Ser Met Ser Cys Gly Val Thr Thr Met Val
 35          40          45
Met His Ser Ser Val Ser Ser Gly Ile Arg Ser Asn Arg Ala Leu Arg
 50          55          60
Pro Ser Pro Leu Ser Val Ser Pro Val Lys Trp Pro Val Ser Gly Ala
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65					70					75					80
Leu	Phe	Asn	Trp	Ser	Thr	Thr	Ile	Thr	Arg	Cys	Gly	Met	Ala	Ser	Lys
				85					90					95	
Ser	His	Thr	Pro	Trp	Val	Ala	Ser	Glu	Thr	Gly	Cys	Arg			
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<210> 22
 <211> 957
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 22

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gttgaggaa	cgctgcatca	ccctgagcaa	cgtactgctc	ggcgccggcc	tggtgccggt	180
cgaaccgcag	aacgaagtcg	gaccgctgaa	cagctacctg	cgctgggtcc	cctcaaactt	240
cgatccaaac	gagaagcgag	ccctggagtg	gtacacccag	atgatgttcg	ctcagcacat	300
cgccaacctg	tcgcccattc	gggggcgcac	caccggtacc	ggacaccctg	gcttcacgct	360
gttcaaccgt	ggcggcgcgc	cgttgacctt	cgacccggtt	aacaagctgg	accggcagat	420
gaatgccac	ggcttcatct	tcggggcaac	tggtcccggc	aagtcggcgt	ccctgaccaa	480
cctcatctgc	cagatgctcg	ccatgtacct	gccgcggatg	ttcgtcgcgg	aagcgggcaa	540
cagcttcggc	ctgctggccg	acttagccaa	gcggtttggc	ctctcggtcc	accgggtgcg	600
cctcgccccg	ggctccggcg	tcagcctggc	gccgttcgcg	gacgccatca	agctggtcga	660
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gggcagcaag	gccgacctcg	aggacgacca	gcgagacatc	ctgggcgaga	tggagatcgt	780
cgcccgctc	atgattaccg	gtggcggaaga	gaaggaagat	gcgcgcctga	cccgtgccga	840
tcgcagcgcc	gtccgccagg	cgatcctggc	ggcggccagg	acctgcgccg	ccgcgaaccg	900
cacggtactg	acccaagacg	tgcgcgatgc	gctctacgag	gcctccagga	gcgatag	957

<210> 23
 <211> 318
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 23

His	Pro	Gly	Leu	Asp	Pro	His	Pro	Arg	Gly	Arg	Gly	His	Arg	Ser	Thr
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Pro	Asp	Arg	Pro	Gly	Ala	Gln	Ala	Leu	Ser	Arg	Ser	Asp	Arg	Ser	Val
			20					25					30		
Arg	Ala	Arg	Pro	Arg	Pro	Tyr	Pro	Val	Gly	Gly	Thr	Leu	His	His	Pro
			35				40					45			
Glu	Gln	Arg	Thr	Ala	Arg	Arg	Pro	Gly	Ala	Gly	Arg	Thr	Ala	Glu	
	50				55					60					
Arg	Ser	Arg	Thr	Ala	Glu	Gln	Leu	Pro	Ala	Leu	Ala	Pro	Leu	Lys	Leu
65					70				75					80	
Arg	Ser	Lys	Arg	Glu	Ala	Ser	Pro	Gly	Val	Val	His	Pro	Asp	Asp	Val
			85					90					95		
Arg	Ser	Ala	His	Arg	Gln	Pro	Val	Ala	His	Leu	Gly	Ala	His	His	Arg
			100				105						110		
Tyr	Arg	Thr	Pro	Trp	Leu	His	Ala	Val	Gln	Pro	Trp	Arg	Arg	Ala	Val
		115					120					125			
Asp	Leu	Arg	Pro	Val	Gln	Gln	Ala	Gly	Pro	Ala	Asp	Glu	Cys	Pro	Arg
		130				135					140				
Leu	His	Leu	Arg	Ala	Asn	Trp	Leu	Arg	Gln	Val	Gly	Val	Pro	Asp	Gln
145					150					155				160	
Pro	His	Leu	Pro	Asp	Ala	Arg	His	Val	Pro	Ala	Ala	Asp	Val	Arg	Arg
			165					170					175		
Gly	Ser	Gly	Gln	Gln	Leu	Arg	Pro	Ala	Gly	Arg	Leu	Ser	Gln	Ala	Val

	180		185		190										
Trp	Pro	Leu	Gly	Pro	Pro	Gly	Ala	Pro	Arg	Pro	Gly	Leu	Arg	Arg	Gln
	195		200		205										
Pro	Gly	Ala	Val	Arg	Gly	Arg	His	Gln	Ala	Gly	Arg	Glu	Pro	Arg	Pro
	210		215		220										
Ser	Glu	Gly	Ala	Gly	Arg	Arg	Arg	His	Arg	Gly	Leu	Gly	Leu	Gly	Pro
225					230					235					240
Gly	Gln	Gln	Gly	Arg	Pro	Arg	Gly	Arg	Pro	Ala	Arg	His	Pro	Gly	Arg
			245						250					255	
Asp	Gly	Asp	Arg	Arg	Pro	Pro	His	Asp	Tyr	Arg	Trp	Arg	Arg	Glu	Gly
			260					265						270	
Arg	Cys	Ala	Pro	Asp	Pro	Cys	Arg	Ser	Gln	Arg	Arg	Pro	Pro	Gly	Asp
	275						280					285			
Pro	Gly	Gly	Gly	Gln	Asp	Leu	Arg	Arg	Arg	Glu	Pro	His	Gly	Thr	Asp
	290					295					300				
Pro	Arg	Arg	Ala	Arg	Cys	Ala	Leu	Arg	Gly	Leu	Gln	Glu	Arg		
305					310					315					

<210> 24
 <211> 330
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 24	
gtcggccagc aggccgaagc tgttgcccgc ttccgcgcagc aacatccgcg gcaggtacat	60
ggcgagcatc tggcagatga ggttggtcag ggacgccgac ttgccggagc cagttggccc	120
gaagatgaag ccgtgggcat tcatctgccg gtccagcttg ttgaacgggt cgaagggtcaa	180
cggcgcgccg ccacggttga acagcgtgaa gccaggggtg ccggtaccgg tgggtgcgccc	240
ccagatgggc gacaggttgg cgatgtgctg agcgaacatc atctgggtgt accactccag	300
ggctcgcttc tcgtttggat cgaagtttga	330

<210> 25
 <211> 109
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 25	
Val Gly Gln Gln Ala Glu Ala Val Ala Arg Phe Arg Asp Glu His Pro	
1 5 10 15	
Arg Gln Val His Gly Glu His Leu Ala Asp Glu Val Gly Gln Gly Arg	
20 25 30	
Arg Leu Ala Gly Ala Ser Trp Pro Glu Asp Glu Ala Val Gly Ile His	
35 40 45	
Leu Pro Val Gln Leu Val Glu Arg Val Glu Gly Gln Arg Arg Ala Ala	
50 55 60	
Thr Val Glu Gln Arg Glu Ala Arg Val Ser Gly Thr Gly Gly Ala Pro	
65 70 75 80	
Pro Asp Gly Arg Gln Val Gly Asp Val Leu Ser Glu His His Leu Gly	
85 90 95	
Val Pro Leu Gln Gly Ser Leu Leu Val Trp Ile Glu Val	
100 105	

<210> 26
 <211> 642
 <212> DNA
 <213> Pseudomonas aeruginosa

```

<400> 26
agcgcacgcgc gcacgtcttg gggtcagtagc gtgcgggttcg cggcgggcgca ggtcctggcc 60
gccgccagga tcgcctggcg gacggcgctg cgatcggcac gggtcaggcg cgcattcttc 120
ttctcttcgc caccggtaat catgaggcgg gcgacgatct ccatctcgcc caggatgtct 180
cgctggctgt cctcgaggtc ggccttgctg ccttggaccg agtccgaggc ctcgatgtct 240
tcggcggtcca gcaccttcac ttgggtcgggg ctctcgacca gcttgatggc gtccgcgaac 300
ggcgccaggc tgacgccgga gcccggggcg aggcgcaccc ggtggaccga gaggccaaac 360
cgcttggtta agtcggccag caggccgaag ctggtgcccg cttccgcgac gaacatccgc 420
ggcaggtaca tggcgagcat ctggcagatg aggttggtca gggacgccga cttgccggag 480
ccagttggcc cgaagatgaa gccgtgggca ttcattctgc ggtccagctt gttgaacggg 540
tcgaagggtca acggcgcgcc gccacggttg aacagcgtga agccagggtg tccgggtaccg 600
gtggtgcgcc cccagatggg cgacaggttg gcatgtgct ga 642

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<210> 27
<211> 213
<212> PRT
<213> Pseudomonas aeruginosa

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<400> 27
Ser Ala Ser Arg Thr Ser Trp Val Ser Thr Val Arg Phe Ala Ala Ala
1      5      10      15
Gln Val Leu Ala Ala Ala Arg Ile Ala Trp Arg Thr Ala Leu Arg Ser
20     25     30
Ala Arg Val Arg Arg Ala Ser Ser Phe Ser Ser Pro Pro Val Ile Met
35     40     45
Arg Arg Ala Thr Ile Ser Ile Ser Pro Arg Met Ser Arg Trp Ser Ser
50     55     60
Ser Arg Ser Ala Leu Leu Pro Trp Thr Glu Ser Glu Ala Ser Met Ser
65     70     75     80
Ser Ala Ser Ser Thr Phe Thr Trp Ser Gly Leu Ser Thr Ser Leu Met
85     90     95
Ala Ser Ala Asn Gly Ala Arg Leu Thr Pro Glu Pro Gly Ala Arg Arg
100    105    110
Thr Arg Trp Thr Glu Arg Pro Asn Arg Leu Ala Lys Ser Ala Ser Arg
115    120    125
Pro Lys Leu Leu Pro Ala Ser Ala Thr Asn Ile Arg Gly Arg Tyr Met
130    135    140
Ala Ser Ile Trp Gln Met Arg Leu Val Arg Asp Ala Asp Leu Pro Glu
145    150    155    160
Pro Val Gly Pro Lys Met Lys Pro Trp Ala Phe Ile Cys Arg Ser Ser
165    170    175
Leu Leu Asn Gly Ser Lys Val Asn Gly Ala Pro Pro Arg Leu Asn Ser
180    185    190
Val Lys Pro Gly Cys Pro Val Pro Val Val Arg Pro Gln Met Gly Asp
195    200    205
Arg Leu Ala Met Cys
210

```

```

<210> 28
<211> 1407
<212> DNA
<213> Pseudomonas aeruginosa

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```

<400> 28
gcgcctgttg ggccgtatca ggctgtggat gttgtgtcag ccattcatcc aagagctgct 60
ttatctgcgg gacgatatcc cggcgatcga ctgccctcag ttgaatctgc tgcagctcct 120
ctatcagtagc aggcgcgcac atccttagcg tctgcagggc atcctcttcg gggttctgca 180
ggatctgggt cagggtgtcg atcaggttct gggtcagcga attcagaact ctcattcgct 240

```

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ctggcactcc actgccggtt ggtctgggaa aacaatgggg aaggggtggca ggccgcgcgc 300
cttgtcgaga tccgctgcga cctgcaaggc cgctcgagc tcgtcgagc cgggtggcttg 360
catgatgttg tagcgtggt tcttttcttc gttttcggtc atggccaggg ccaggtagag 420
actcggggga accacacgga cgaggatttc tttgcccttg gccaggagca cgccctcggg 480
gaacttgccg ctttccttgc gggccgagag catcatcgac ttctgcgccg gcgacagctc 540
gcggaacctg gatattctct ctacttcgtc ggggggcatg ttcaggcaca accaccactc 600
gatcatgttc agcatcggcg ccccgagggc tgggatgtcg tcgatgttct ggggtggcgag 660
ccagaaccag gcgcccagtt tccgccacat cttggtgatc ttcattggcg agggcagcag 720
cagcgggtgc ttggtgatga tgtgcccctc atcgggtgatc ttgacgattg gccggccctt 780
gaactggtcg cgttcggcga tgttgttcac ggtgttcagc agcgagatgt aggcgatccc 840
gagctgggcg gcgtagcctt cgcgcgcgta cgttgcgaaa tccaccacgg taaggtcggc 900
ctcaggccag ggcgtgcctt cgcgattgaa catctcgccg tcggcgccca tgcagaacat 960
ctgcatgggt tccgccattt cgcgcatccg cgcgcgcggt tctggcgcggt tgctatcgct 1020
cctggaggcc tcgtagagcg catcgcgcac gtcttgggtc agtaccgtgc ggttcgcggc 1080
ggcgaggtc ctggcccgcc ccaggatcgc ctggcgagcg gcgctgcgat cggcacgggt 1140
caggcgcgca tcttctcttct cttcgccacc ggtaatcatg aggcggggcg cgatctccat 1200
ctcgcccagg atgtctcgct ggtcgtcctc gaggtcggcc ttgctgccct ggaccgagtc 1260
cgaggcctcg atgtcttcgg cgtccagcac cttcacttgg tcggggctct cgaccagctt 1320
gatggcgtcc gcgaacggcg ccaggctgac gccggagccc ggggagaggc gcacccggtg 1380
gaccgagagg ccaaaccgct tggctaa 1407

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<210> 29

<211> 468

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 29

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Ala Pro Val Gly Pro Tyr Gln Ala Val Asp Val Val Ala Ala Ile His
 1          5          10          15
Pro Arg Ala Ala Leu Ser Ala Gly Arg Tyr Pro Gly Asp Arg Leu Pro
          20          25          30
Ser Val Glu Ser Ala Ala Ala Pro Leu Ser Val Gln Glu Arg Ile Ser
          35          40          45
Leu Ala Ser Ala Gly His Pro Leu Arg Gly Ser Ala Gly Ser Gly Ser
          50          55          60
Gly Cys Arg Ser Gly Ser Gly Ser Ala Asn Ser Glu Leu Ser Phe Val
65          70          75          80
Leu Ala Leu His Cys Arg Leu Val Trp Glu Asn Asn Gly Glu Gly Trp
          85          90          95
Gln Ala Ala Arg Leu Val Glu Ile Arg Cys Asp Leu Gln Gly Arg Leu
          100          105          110
Glu Leu Val Ala Ala Gly Gly Leu His Asp Val Val Ala Leu Val Leu
          115          120          125
Phe Phe Val Phe Gly His Gly Gln Gly Gln Val Glu Thr Arg Gly Asn
          130          135          140
His Thr Asp Glu Val Phe Phe Ala Leu Gly Gln Glu His Ala Leu Gly
          145          150          155          160
Glu Leu Ala Ala Phe Leu Ala Gly Arg Glu His His Arg Leu Leu Arg
          165          170          175
Arg Arg Gln Leu Ala Glu Pro Gly Tyr Leu Leu Tyr Phe Val Gly Gly
          180          185          190
His Val Gln Ala Gln Pro Pro Leu Asp His Val Gln His Arg Arg Pro
          195          200          205
Gly Gly Trp Asp Val Val Asp Val Leu Gly Gly Glu Pro Glu Pro Gly
          210          215          220
Ala Gln Phe Pro Pro His Leu Gly Asp Leu His Gly Val Gly Gln Gln
          225          230          235          240
Gln Arg Val Leu Gly Asp Asp Val Pro Leu Ile Gly Asp Leu Asp Asp
          245          250          255

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Trp Pro Ala Leu Glu Leu Val Ala Phe Gly Asp Val Val His Gly Val
 260 265 270
 Gln Gln Arg Asp Val Gly Asp Pro Glu Leu Gly Gly Val Ala Phe Ala
 275 280 285
 Arg Val Arg Cys Glu Ile His Gly Lys Val Gly Leu Arg Pro Gly
 290 295 300
 Arg Ala Phe Ala Ile Glu His Leu Ala Val Gly Ala His Ala Glu His
 305 310 315 320
 Leu His Gly Phe Arg His Phe Gly Asp Pro Arg Ala Ala Phe Trp Arg
 325 330 335
 Gly Ala Ile Ala Pro Gly Gly Leu Val Glu Arg Ile Ala His Val Leu
 340 345 350
 Gly Gln Tyr Arg Ala Val Arg Gly Gly Ala Gly Pro Gly Arg Arg Gln
 355 360 365
 Asp Arg Leu Ala Asp Gly Ala Ala Ile Gly Thr Gly Gln Ala Arg Ile
 370 375 380
 Phe Leu Leu Phe Ala Thr Gly Asn His Glu Ala Gly Asp Asp Leu His
 385 390 395 400
 Leu Ala Gln Asp Val Ser Leu Val Val Leu Glu Val Gly Leu Ala Ala
 405 410 415
 Leu Asp Arg Val Arg Gly Leu Asp Val Phe Gly Val Gln His Leu His
 420 425 430
 Leu Val Gly Ala Leu Asp Gln Leu Asp Gly Val Arg Glu Arg Arg Gln
 435 440 445
 Ala Asp Ala Gly Ala Arg Gly Glu Ala His Pro Val Asp Arg Glu Ala
 450 455 460
 Lys Pro Leu Gly
 465

<210> 30
 <211> 798
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 30
 gggggcacatc atcaccaagc acccgctgct gctgccctac gccatgaaga tcaccaagat 60
 gtggcgga aa ctgggcgcct ggttctggct cgccaccag aacatcgacg acatcccagc 120
 ctccggggcg ccgatgctga acatgatcga gtgggtggtg tgccctgaaca tgccccccga 180
 cgaagtagag aagatatcca ggttccgcga gctgtcgcg gcgcagaagt cgatgatgct 240
 ctccggcccg aaggaaagcg gcaagttcac cgagggcgtg ctccctggcca agggcaaaga 300
 atacctcgtc cgtgtgtgttc ccccagatct ctacctggcc ctggccatga ccgaaaacga 360
 agaaaagaac cagcgctaca acatcatgca agccaccggc tgcgacgagc tcgagggcggc 420
 cttgcaggtc gcagcggatc tcgacaaggc gcgcggcctg ccacccttcc ccattgtttt 480
 cccagaccaa ccggcagtg agtgccagga cgaatgagag ttctgaattc gctgacccag 540
 aacctgatcg acaacctgac ccagatcctg cagaaccccg aagaggatgc cctgcagacg 600
 ctaaggatat gcgctcctgt actgatagag gagctgcagc agattcaact gagggcagtc 660
 gatcgccggg ataatcgctcc gcagataaag cagctcttgg atgaatggct gcaacaacat 720
 ccacagcctg atacggccca acaggcgctc attgaggccg tggaccgcgc ggagatccta 780
 cagcggaggc aagcgtga 798

<210> 31
 <211> 265
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 31
 Gly Ala His His His Gln Ala Pro Ala Ala Ala Leu Arg His Glu
 1 5 10 15

Asp His Gln Asp Val Ala Glu Thr Gly Arg Leu Val Leu Ala Arg His
 20 25 30
 Pro Glu His Arg Arg His Pro Ser Leu Arg Gly Ala Asp Ala Glu His
 35 40 45
 Asp Arg Val Val Val Val Pro Glu His Ala Pro Arg Arg Ser Arg Glu
 50 55 60
 Asp Ile Gln Val Pro Arg Ala Val Ala Gly Ala Glu Val Asp Asp Ala
 65 70 75 80
 Leu Gly Pro Gln Gly Lys Arg Gln Val His Arg Gly Arg Ala Pro Gly
 85 90 95
 Gln Gly Gln Arg Ile Pro Arg Pro Cys Gly Ser Pro Glu Ser Leu Pro
 100 105 110
 Gly Pro Gly His Asp Arg Lys Arg Arg Lys Glu Pro Ala Leu Gln His
 115 120 125
 His Ala Ser His Arg Leu Arg Arg Ala Arg Gly Gly Leu Ala Gly Arg
 130 135 140
 Ser Gly Ser Arg Gln Gly Ala Arg Pro Ala Thr Leu Pro His Cys Phe
 145 150 155 160
 Pro Arg Pro Thr Gly Ser Gly Val Pro Gly Arg Met Arg Val Leu Asn
 165 170 175
 Ser Leu Thr Gln Asn Leu Ile Asp Asn Leu Thr Gln Ile Leu Gln Asn
 180 185 190
 Pro Glu Glu Asp Ala Leu Gln Thr Leu Arg Ile Cys Ala Pro Val Leu
 195 200 205
 Ile Glu Glu Leu Gln Gln Ile Gln Leu Arg Ala Val Asp Arg Arg Asp
 210 215 220
 Ile Val Pro Gln Ile Lys Gln Leu Leu Asp Glu Trp Leu Gln Gln His
 225 230 235 240
 Pro Gln Pro Asp Thr Ala Gln Gln Ala Leu Ile Glu Ala Val Asp Arg
 245 250 255
 Ala Glu Ile Leu Gln Arg Arg Gln Ala
 260 265

<210> 32
 <211> 354
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 32
 ccgaaaacga agaaaagaac cagcgctaca acatcatgca agccaccggc tgcgacgagc 60
 tcgaggcggc cttgcaggtc gcagcggatc tcgacaaggc gcgcggcctg ccacccttcc 120
 ccattgtttt cccagaccaa ccggcagtggt agtgccagga cgaatgagag ttctgaattc 180
 gctgacccag aacctgatcg acaacctgac ccagatcctg cagaacccccg aagaggatgc 240
 cctgcagacg ctaaggatat gcgctcctgt actgatagag gagctgcagc agattcaact 300
 gagggcagtc gatcgccggg atatcgctccc gcagataaag cagctcttgg atga 354

<210> 33
 <211> 117
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 33
 Pro Lys Thr Lys Lys Arg Thr Ser Ala Thr Thr Ser Cys Lys Pro Pro
 1 5 10 15
 Ala Ala Thr Ser Ser Arg Arg Pro Cys Arg Ser Gln Arg Ile Ser Thr
 20 25 30
 Arg Arg Ala Ala Cys His Pro Ser Pro Leu Phe Ser Gln Thr Asn Arg
 35 40 45

Gln	Trp	Ser	Ala	Arg	Thr	Asn	Glu	Ser	Ser	Glu	Phe	Ala	Asp	Pro	Glu
50						55					60				
Pro	Asp	Arg	Gln	Pro	Asp	Pro	Asp	Pro	Ala	Glu	Pro	Arg	Arg	Gly	Cys
65					70					75					80
Pro	Ala	Asp	Ala	Lys	Asp	Met	Arg	Ser	Cys	Thr	Asp	Arg	Gly	Ala	Ala
				85					90					95	
Ala	Asp	Ser	Thr	Glu	Gly	Ser	Arg	Ser	Pro	Gly	Tyr	Arg	Pro	Ala	Asp
			100					105					110		
Lys	Ala	Ala	Leu	Gly											
			115												

<210> 34
 <211> 645
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 34

gtcaataagt	tcgttgtctt	tcgcacat	ctccagtcga	gcctgggtcca	gttcaggaaa	60
gtccaatgtg	ccgccaggca	gcccgccttc	gttgccggcc	gactgagcga	agatcgcatc	120
gatagcgctc	cagaaggctt	tggcgccgcc	ttggatcccc	gcgcactcca	ccaggcgagc	180
ctgggtggcgg	gccgcctcgc	catgcatctg	caggggaaga	tggcgccaaa	ccaggttcac	240
gtccggatgg	ctgtctaccc	agcgcttaag	ccgcgggggtg	tagaccttgc	agaaggggca	300
ctccaggtcg	gcgtattcat	tgatcgtcca	gcgcgctttc	gcacgcgcgt	agaggctgtg	360
gttggtggtg	aggcccttca	ccagaagctc	tacccttacg	gcggatgcag	ccagcaagac	420
cagcagcagc	cccgcctcag	gcagggcggg	accttgaaat	cgtttggttg	cccagccgcc	480
cttcaagagt	ctcacgcttg	cctccgctgt	aggatctccg	cgcggtccac	ggcctcaatg	540
agcgctgtt	gggccgtatc	aggctgtgga	tgttggtgca	gccattcatc	caagagctgc	600
tttatctgcg	ggacgatatc	ccggcgatcg	actgccctca	gttga		645

<210> 35
 <211> 214
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 35

Val	Asn	Lys	Phe	Val	Val	Phe	Arg	Thr	Phe	Leu	Gln	Ser	Ser	Leu	Val
1				5					10					15	
Gln	Phe	Arg	Lys	Val	Gln	Cys	Ala	Ala	Arg	Gln	Pro	Ala	Pro	Val	Ala
			20				25						30		
Gly	Arg	Leu	Ser	Glu	Asp	Arg	Ile	Asp	Ser	Ala	Pro	Glu	Gly	Phe	Gly
		35				40					45				
Ala	Ala	Leu	Asp	Pro	Arg	Ala	Leu	His	Gln	Ala	Ser	Leu	Val	Ala	Gly
	50					55					60				
Arg	Leu	Ala	Met	His	Leu	Gln	Gly	Lys	Met	Ala	Pro	Asn	Gln	Val	His
65				70					75					80	
Val	Arg	Met	Ala	Val	Tyr	Pro	Ala	Leu	Lys	Pro	Arg	Gly	Val	Asp	Leu
			85					90					95		
Ala	Glu	Gly	Ala	Leu	Gln	Val	Gly	Val	Phe	Ile	Asp	Arg	Pro	Ala	Arg
			100				105						110		
Phe	Arg	Ile	Ala	Val	Glu	Ala	Val	Val	Gly	Trp	Gln	Ala	Leu	His	Gln
		115					120					125			
Lys	Leu	Tyr	Pro	Tyr	Gly	Gly	Cys	Ser	Gln	Gln	Asp	Gln	Gln	Gln	Pro
	130					135					140				
Arg	Pro	Gly	Gln	Gly	Gly	Thr	Leu	Lys	Ser	Phe	Gly	Cys	Pro	Ala	Ala
145					150					155				160	
Leu	Gln	Glu	Ser	His	Ala	Cys	Leu	Arg	Cys	Arg	Ile	Ser	Ala	Arg	Ser
			165					170						175	
Thr	Ala	Ser	Met	Ser	Ala	Cys	Trp	Ala	Val	Ser	Gly	Cys	Gly	Cys	Cys

		180						185				190			
Cys	Ser	His	Ser	Ser	Lys	Ser	Cys	Phe	Ile	Cys	Gly	Thr	Ile	Ser	Arg
		195					200					205			
Arg	Ser	Thr	Ala	Leu	Ser										
		210													

<210> 36
 <211> 699
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 36
 ggccgtggac cgcgcggaga tcctacagcg gaggcaagcg tgagactctt gaagggcggc 60
 tgggcagcca aacgatttca aggtcccgcc ctgccctggg cggggctgct gctggtcttg 120
 ctggctgcat ccgccgtagg ggtagagctt ctggtgaagg gcctgccagc caaccacagc 180
 ctctacggcg atgcgaaaagc gcgctggacg atcaatgaat acgccgacct ggagtgtcccc 240
 ttctgcaagg tctacacccc gcggcttaag cgctgggtag acagccatcc ggacgtgaac 300
 ctggtttggc gccatcttcc cctgcagatg catggcgagg cggcccgcca ccaggctcgc 360
 ctggtggagt gcgcggggat ccaaggcggc gccaaagcct tctggagcgc tatcgatgcg 420
 atcttcgctc agtcggccgg caacgggggc gggctgcctg gcggcacatt ggactttcct 480
 gaactggacc aggtcgcact ggagaaatgt gcgaaaagaca acgaacttat tgactcagat 540
 atcaagttgg acatcgacat tgcacggtcg aagggcatta cagcgacccc gaccctcgtc 600
 atccgggaca accagacggg acgaagcgtg aagcttgaag gcatggccga cgagaccacg 660
 ttgctgtcgg cgatagactg gctagccaag gatctctag 699

<210> 37
 <211> 232
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 37
 Gly Arg Gly Pro Arg Gly Asp Pro Thr Ala Glu Ala Ser Val Arg Leu
 1 5 10 15
 Leu Lys Gly Gly Trp Ala Ala Lys Arg Phe Gln Gly Pro Ala Leu Pro
 20 25 30
 Trp Ala Gly Leu Leu Leu Val Leu Leu Ala Ala Ser Ala Val Gly Val
 35 40 45
 Glu Leu Leu Val Lys Gly Leu Pro Ala Asn His Ser Leu Tyr Gly Asp
 50 55 60
 Ala Lys Ala Arg Trp Thr Ile Asn Glu Tyr Ala Asp Leu Glu Cys Pro
 65 70 75 80
 Phe Cys Lys Val Tyr Thr Pro Arg Leu Lys Arg Trp Val Asp Ser His
 85 90 95
 Pro Asp Val Asn Leu Val Trp Arg His Leu Pro Leu Gln Met His Gly
 100 105 110
 Glu Ala Ala Arg His Gln Ala Arg Leu Val Glu Cys Ala Gly Ile Gln
 115 120 125
 Gly Gly Ala Lys Ala Phe Trp Ser Ala Ile Asp Ala Ile Phe Ala Gln
 130 135 140
 Ser Ala Gly Asn Gly Gly Leu Pro Gly Gly Thr Leu Asp Phe Pro
 145 150 155 160
 Glu Leu Asp Gln Ala Arg Leu Glu Lys Cys Ala Lys Asp Asn Glu Leu
 165 170 175
 Ile Asp Ser Asp Ile Lys Leu Asp Ile Asp Ile Ala Arg Ser Lys Gly
 180 185 190
 Ile Thr Ala Thr Pro Thr Leu Val Ile Arg Asp Asn Gln Thr Gly Arg
 195 200 205
 Ser Val Lys Leu Glu Gly Met Ala Asp Glu Thr Thr Leu Leu Ser Ala

210 215 220
 Ile Asp Trp Leu Ala Lys Asp Leu
 225 230

<210> 38
 <211> 333
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 38
 acctgggtttg gcgccatctt cccctgcaga tgcattggcga ggcgggccgc caccaggctc 60
 gcctgggtgga gtgcgcgggg atccaaggcg gcgccaaaagc cttctggagc gctatcgatg 120
 cgatcttcgc tcagtcggcc ggcaacgggg gcgggctgcc tggcggcaca ttggactttc 180
 ctgaactgga ccaggctcga ctggagaaat gtgcgaaaga caacgaactt attgactcag 240
 atatcaagtt ggacatcgac attgcacggt cgaaggcat tacagcgacc ccgaccctcg 300
 tcattccggga caaccagacg ggacgaagcg tga 333

<210> 39
 <211> 110
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 39
 Thr Trp Phe Gly Ala Ile Phe Pro Cys Arg Cys Met Ala Arg Arg Pro
 1 5 10 15
 Ala Thr Arg Leu Ala Trp Trp Ser Ala Arg Gly Ser Lys Ala Ala Pro
 20 25 30
 Lys Pro Ser Gly Ala Leu Ser Met Arg Ser Ser Leu Ser Arg Pro Ala
 35 40 45
 Thr Gly Ala Gly Cys Leu Ala Ala His Trp Thr Phe Leu Asn Trp Thr
 50 55 60
 Arg Leu Asp Trp Arg Asn Val Arg Lys Thr Thr Asn Leu Leu Thr Gln
 65 70 75 80
 Ile Ser Ser Trp Thr Ser Thr Leu His Gly Arg Arg Ala Leu Gln Arg
 85 90 95
 Pro Arg Pro Ser Ser Ser Gly Thr Thr Arg Arg Asp Glu Ala
 100 105 110

<210> 40
 <211> 327
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 40
 gaaatcggcg aggattccaa catccctctt ttggctctcc aggatgccct gcacttcacc 60
 tggcagaacc tcgacctcct ccccatccac aatctttacc attctcttgt ggccggagct 120
 ggtgaggcta agcctcaact ccattgccgg ccgagcattg atgtaaatgc tctcgagcaa 180
 gcgctccatg acttcgacca ctcttaata tcagttagcc agctacatac aggaattatg 240
 ctacccagga catgcaggcg tcacccttac ttatgtacgt ggcagcggtc gatcacggct 300
 cgaaaaaata caccacctac gatttga 327

<210> 41
 <211> 108
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 41

Glu	Ile	Gly	Glu	Asp	Ser	Asn	Ile	Pro	Leu	Leu	Val	Leu	Gln	Asp	Ala
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Leu	His	Phe	Thr	Trp	Gln	Asn	Leu	Asp	Leu	Leu	Pro	Ile	His	Asn	Leu
			20					25					30		
Tyr	His	Ser	Leu	Val	Ala	Gly	Ala	Gly	Glu	Ala	Lys	Pro	Gln	Leu	His
		35				40						45			
Cys	Arg	Pro	Ser	Ile	Asp	Val	Asn	Ala	Leu	Glu	Gln	Ala	Leu	His	Asp
	50					55					60				
Phe	Asp	His	Ser	Leu	Ile	Ser	Val	Ser	Gln	Leu	His	Thr	Gly	Ile	Met
65					70					75					80
Leu	Pro	Arg	Thr	Cys	Arg	Arg	His	Pro	Tyr	Leu	Cys	Thr	Trp	Gln	Arg
			85						90					95	
Ser	Ile	Thr	Ala	Arg	Lys	Asn	Thr	Pro	Pro	Thr	Ser				
			100					105							

<210> 42
 <211> 303
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 42	
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cagacccatg	cctcttcatc actccccccc tggccggcgg ccaccaacgc tggccggttg 120
cgtactactg	gtactgctga gcagcgcgag tcaggccgaa acctgggtca tcaccgacaa 180
ggctcatccg	gtctctgcca ccggtatcgtc gcgcgttctg tttctggacg cccaggaaca 240
cctcgaggag	caactgactg cggccttgcc ccaggatcca cagcatgctc aagcggcggtt 300
taa	303

<210> 43
 <211> 100
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 43															
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1				5					10					15	
Leu	Glu	Pro	Val	Gln	Thr	His	Ala	Ser	Ser	Ser	Leu	Pro	Pro	Trp	Pro
			20					25					30		
Ala	Ala	Thr	Asn	Ala	Gly	Arg	Trp	Arg	Thr	Thr	Gly	Thr	Ala	Glu	Gln
		35				40					45				
Arg	Glu	Ser	Gly	Arg	Asn	Leu	Gly	His	His	Arg	Gln	Gly	Ser	Ser	Gly
	50				55					60					
Leu	Cys	His	Arg	Ile	Val	Ala	Arg	Ser	Val	Ser	Gly	Arg	Pro	Gly	Thr
65					70					75					80
Pro	Arg	Gly	Ala	Thr	Asp	Cys	Gly	Leu	Ala	Pro	Gly	Ser	Thr	Ala	Cys
			85					90						95	
Ser	Ser	Gly	Val												
			100												

<210> 44
 <211> 447
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 44	
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gccgttggcg	tactactggt actgctgagc agcgcgagtc aggccgaaac ctgggtcatc 120

accgacaagg	ctcatccggt	ctctgccacc	ggatcgctcg	gcgttctgtt	tctggacgcc	180
caggaacacc	tcgaggagca	actgactgcg	gccttgcccc	aggatccaca	gcattgctcaa	240
gcggcggttta	agcgattgct	acaaagcccc	gatgggcgcc	gcctgcaggc	agagctggtc	300
aaggcacaac	aagacgtcgc	cgatgcgtgg	agtctcggtg	tcgagaagat	ccctgccgta	360
gtagtcgata	ggcagtcagt	ggtctacggc	gaaccggatg	tttcgcgcgc	tcttgagcta	420
atcgccaagg	ccaggaggtc	gcgctga				447

<210> 45

<211> 148

<212> PRT

<213> Pseudomonas aeruginosa

<400> 45

Asn	Arg	Tyr	Arg	Pro	Met	Pro	Leu	His	His	Ser	Pro	Pro	Gly	Arg	Arg
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Pro	Pro	Thr	Leu	Ala	Val	Gly	Val	Leu	Leu	Val	Leu	Leu	Ser	Ser	Ala
		20					25						30		
Ser	Gln	Ala	Glu	Thr	Trp	Val	Ile	Thr	Asp	Lys	Ala	His	Pro	Val	Ser
	35					40					45				
Ala	Thr	Gly	Ser	Ser	Arg	Val	Leu	Phe	Leu	Asp	Ala	Gln	Glu	His	Leu
	50					55					60				
Glu	Glu	Gln	Leu	Thr	Ala	Ala	Leu	Pro	Gln	Asp	Pro	Gln	His	Ala	Gln
65					70				75					80	
Ala	Ala	Phe	Lys	Arg	Leu	Leu	Gln	Ser	Pro	Asp	Gly	Arg	Arg	Leu	Gln
			85					90						95	
Ala	Glu	Leu	Val	Lys	Ala	Gln	Gln	Asp	Val	Ala	Asp	Ala	Trp	Ser	Leu
			100					105					110		
Gly	Val	Glu	Lys	Ile	Pro	Ala	Val	Val	Val	Asp	Arg	Gln	Tyr	Val	Val
	115					120						125			
Tyr	Gly	Glu	Pro	Asp	Val	Ser	Arg	Ala	Leu	Glu	Leu	Ile	Ala	Lys	Ala
	130					135					140				
Arg	Arg	Ser	Arg												
145															

<210> 46

<211> 1017

<212> DNA

<213> Pseudomonas aeruginosa

<400> 46

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cggcccagag	ttgggaaaca	ccgcgcagtt	gaggctcagg	gatgggggtca	gctcctgcca	180
tttcccgggtc	gaggcatcgc	cctctttcag	ctcgcccgcc	ggccagtagc	cgtccttggg	240
ggctgcgcgc	atggggaggt	agacgtggag	ctggccgatt	cgctgtgtga	tatcgccggc	300
gcgctgggcg	atgacggctg	ccgtcttgta	gtcgtcggtc	tggtgcagga	agccgctgcg	360
cggatagagg	ttccccaca	tgtcgccgga	gaagattcca	cccacctcgc	gcagccctgg	420
gaccaacgct	tcgggggtaca	cctgctcggg	aattccatgc	cgccagccaa	tggcgctccag	480
tgtgctgaga	aagtacggca	ccagcgggac	ggtggcgcca	gggcaaactg	acccagaggc	540
gctggcgaac	cggctgaacg	tggcgccacc	aggatggccg	atcacatccg	cttccttgaa	600
gcggccgatg	ctgttctcgg	ccttgtagtt	tgtggtcggc	tcattgcccg	cctgggcgag	660
tggattccggt	gtacccagcg	ccgataccctc	ggtccagggg	ttgctcccgg	tattcgcgta	720
gctggagacg	actgcgtcag	gcacgtagtg	gcggaccttg	accgacgtct	tcactttgca	780
gccatgcggg	ccgcagagca	gccagtaaca	gatcccagac	accttgattt	cgaggcactg	840
aggggaaagg	gtggaggaga	cgatggcagc	gctgttgatc	gcggccgagg	ccgtgaacga	900
gaggctgaag	gtggcgggcg	ccgctgccag	gcggcgaggg	ttgaggctgg	tcatcagcgc	960
gacctcctgg	ccttggcgat	tagctcaaga	gcgcgcgaaa	catccggttc	gccgtag	1017

<210> 47
 <211> 338
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 47
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 Pro Leu Ala Leu Ala Ala Gly Val Gly Thr Pro Glu Arg Pro Gly Val
 20 25 30
 Leu Pro Val Asp Gly Leu Arg Leu Arg Pro Arg Val Gly Lys His Arg
 35 40 45
 Ala Val Glu Ala Gln Gly Trp Gly Gln Leu Leu Pro Phe Pro Gly Arg
 50 55 60
 Gly Ile Ala Leu Phe Gln Leu Ala Arg Arg Pro Val Ala Val Leu Gly
 65 70 75 80
 Gly Cys Ala His Gly Glu Val Asp Val Glu Leu Ala Asp Ser Arg Gly
 85 90 95
 Asp Ile Ala Gly Ala Leu Gly Asp Asp Gly Cys Arg Leu Val Val Val
 100 105 110
 Gly Leu Val Gln Glu Ala Ala Ala Arg Ile Glu Val Pro Pro His Val
 115 120 125
 Ala Gly Glu Asp Ser Thr His Leu Ala Gln Pro Trp Asp Gln Arg Phe
 130 135 140
 Gly Val His Leu Leu Gly Asn Ser Met Pro Pro Ala Asn Gly Val Gln
 145 150 155 160
 Cys Ala Glu Lys Val Arg His Gln Arg Asp Gly Gly Ala Arg Ala Asn
 165 170 175
 Val Pro Arg Gly Ala Gly Glu Pro Ala Glu Arg Gly Ala Thr Arg Met
 180 185 190
 Ala Asp His Ile Arg Phe Leu Glu Ala Ala Asp Ala Val Leu Gly Leu
 195 200 205
 Val Val Cys Gly Arg Val Ile Ala Gly Leu Gly Glu Trp Ile Arg Cys
 210 215 220
 Thr Gln Arg Arg Tyr Leu Gly Pro Gly Val Ala Pro Gly Ile Arg Val
 225 230 235 240
 Ala Gly Asp Asp Cys Val Arg His Val Val Ala Asp Leu Asp Arg Arg
 245 250 255
 Leu His Phe Ala Ala Met Arg Ala Ala Glu Gln Pro Val Thr Asp Pro
 260 265 270
 Asp Asp Leu Val Phe Glu Ala Leu Arg Gly Lys Gly Gly Gly Asp Asp
 275 280 285
 Gly Ser Ala Val Asp Arg Gly Arg Gly Arg Glu Arg Glu Ala Glu Gly
 290 295 300
 Gly Gly Arg Arg Cys Gln Ala Ala Glu Val Glu Ala Gly His Gln Arg
 305 310 315 320
 Asp Leu Leu Ala Leu Ala Ile Ser Ser Arg Ala Arg Glu Thr Ser Gly
 325 330 335
 Ser Pro

<210> 48
 <211> 969
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 48
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60

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atcgctctct	ccaccctttc	ccctcagtg	ctcgaataca	aggctcgctgg	gatctgttac	180
tggtctgctct	gcggcccgca	tggtcgcaaa	gtgaagacgt	cgggtcaagg	ccgccactac	240
gtgcctgacg	cagtcgtctc	cagctacgcg	aataccggga	gcaacccctg	gaccgaggta	300
tcggcgctgg	gtacaccgaa	tccactcgcc	caggccggca	atgacgcgac	cacaaactac	360
aaggccgaga	acagcatcgg	ccgcttcaag	gaagcggatg	tgatcggcca	tcctgggtggc	420
gccacgttca	gccgggttcg	cagcgctctc	gggtacgttt	gccctggcgc	caccgtcccg	480
ctgggtgccg	actttctcag	cacactggac	gccattggct	ggcggcatgg	aattcccgag	540
cagggtgtacc	ccgaagcggt	gggtcccagg	ctgcgcgagg	tggttggaat	cttctccggc	600
gacatgtggg	ggaacctcta	tccgcgcagc	ggcttcctgc	accagaccga	cgactacaag	660
acggcagccg	tcatcgccca	gcgcgcgggc	gatataacca	cgcgaaatcg	ccagctccac	720
gtctacctcc	ccatgcgcgc	agcccccaag	gacggctact	ggccggcggg	cgagctgaaa	780
gagggcgatg	cctcgaccgg	gaaatggcag	gagctgacct	catccctgag	cctcaactgc	840
gcgggtgttc	ccaactctgg	gccgaagacg	caagccgtcg	acggggagca	cgctggggcg	900
ctctggcgctc	cctactcctg	ctgccagcgc	aaggggcaga	tgttcatctg	cagtaccgac	960
ttccaataa						969

<210> 49

<211> 322

<212> PRT

<213> Pseudomonas aeruginosa

<400> 49

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Arg	Arg	Leu	Ala	Ala	Ala	Ala	Ala	Thr	Phe	Ser	Leu	Ser	Phe	Thr	Ala
			20					25					30		
Ser	Ala	Ala	Ile	Asn	Ser	Ala	Ala	Ile	Val	Ser	Ser	Thr	Leu	Ser	Pro
		35					40					45			
Gln	Cys	Leu	Glu	Tyr	Lys	Val	Val	Gly	Ile	Cys	Tyr	Trp	Leu	Leu	Cys
	50					55					60				
Gly	Pro	His	Gly	Cys	Lys	Val	Lys	Thr	Ser	Val	Lys	Val	Arg	His	Tyr
65					70					75				80	
Val	Pro	Asp	Ala	Val	Val	Ser	Ser	Tyr	Ala	Asn	Thr	Gly	Ser	Asn	Pro
				85					90					95	
Trp	Thr	Glu	Val	Ser	Ala	Leu	Gly	Thr	Pro	Asn	Pro	Leu	Ala	Gln	Ala
			100					105					110		
Gly	Asn	Asp	Ala	Thr	Thr	Asn	Tyr	Lys	Ala	Glu	Asn	Ser	Ile	Gly	Arg
	115						120					125			
Phe	Lys	Glu	Ala	Asp	Val	Ile	Gly	His	Pro	Gly	Gly	Ala	Thr	Phe	Ser
	130					135					140				
Arg	Phe	Ala	Ser	Ala	Ser	Gly	Tyr	Val	Cys	Pro	Gly	Ala	Thr	Val	Pro
145					150					155					160
Leu	Val	Pro	Tyr	Phe	Leu	Ser	Thr	Leu	Asp	Ala	Ile	Gly	Trp	Arg	His
				165					170					175	
Gly	Ile	Pro	Glu	Gln	Val	Tyr	Pro	Glu	Ala	Leu	Val	Pro	Gly	Leu	Arg
			180					185					190		
Glu	Val	Gly	Gly	Ile	Phe	Ser	Gly	Asp	Met	Trp	Gly	Asn	Leu	Tyr	Pro
	195						200					205			
Arg	Ser	Gly	Phe	Leu	His	Gln	Thr	Asp	Asp	Tyr	Lys	Thr	Ala	Ala	Val
	210					215					220				
Ile	Ala	Gln	Arg	Ala	Gly	Asp	Ile	Thr	Thr	Arg	Ile	Gly	Gln	Leu	His
225					230					235					240
Val	Tyr	Leu	Pro	Met	Arg	Ala	Ala	Pro	Lys	Asp	Gly	Tyr	Trp	Pro	Ala
				245						250				255	
Gly	Glu	Leu	Lys	Glu	Gly	Asp	Ala	Ser	Thr	Gly	Lys	Trp	Gln	Glu	Leu
			260					265					270		
Thr	Pro	Ser	Leu	Ser	Leu	Asn	Cys	Ala	Val	Phe	Pro	Asn	Ser	Gly	Pro
		275					280					285			

Lys Thr Gln Ala Val Asp Gly Glu His Ala Trp Ala Leu Trp Arg Pro
 290 295 300
 Tyr Ser Cys Cys Gln Arg Lys Gly Gln Met Phe Ile Cys Ser Thr Asp
 305 310 315 320
 Phe Gln

<210> 50
 <211> 2025
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 50
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 cggccatcct ggtggcgcca cggttcagccg gttcgccagc gcctctgggt acgtttgccc 120
 tggcgccacc gtcccgtctg tgccgtactt tctcagcaca ctggacgcca ttggctggcg 180
 gcatggaatt cccgagcagg tgtaccccga agcgttggtc ccagggctgc gcgaggtggg 240
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 gaccgacgac tacaagacgg cagccgtcat cgccagcgc gccggcgata tcaccacgcy 360
 aatcggccag ctccacgtct acctcccat cgcgcagcc cccaaggacg gctactggcc 420
 ggcgggcgag ctgaaagagg gcgatgcctc gaccgggaaa tggcaggagc tgaccccatc 480
 cctgagcctc aactgcgcgg tgtttcccaa ctctgggccc aagacgcaag ccgtcgcagc 540
 ggagcacgcc tgggcgctct ggcgctcccta ctctgctgc cagcgcaagg ggcagatgtt 600
 catctgcagt accgacttcc aataaggaca cggagacgaa tcatgcgaat gaacatcacc 660
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 aatggcatcc tgcaggcgcg gatcgactac gaccgctcga aagggacttg caaaacgatc 1080
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 gtcgatcagc agaccagcct cctgcagcag gagatctcca atctcaagac cgaactggaa 1860
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<210> 51
 <211> 674
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 51
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 Ser Gly Cys Asp Arg Pro Ser Trp Trp Arg His Val Gln Pro Val Arg
 20 25 30

Gln	Arg	Leu	Trp	Val	Arg	Leu	Pro	Trp	Arg	His	Arg	Pro	Ala	Gly	Ala		
		35					40					45					
Val	Leu	Ser	Gln	His	Thr	Gly	Arg	His	Trp	Leu	Ala	Ala	Trp	Asn	Ser		
	50					55					60						
Arg	Ala	Gly	Val	Pro	Arg	Ser	Val	Gly	Pro	Arg	Ala	Ala	Arg	Gly	Gly		
65					70					75					80		
Trp	Asn	Leu	Leu	Arg	Arg	His	Val	Gly	Glu	Pro	Leu	Ser	Ala	Gln	Arg		
				85					90					95			
Leu	Pro	Ala	Pro	Asp	Arg	Arg	Leu	Gln	Asp	Gly	Ser	Arg	His	Arg	Pro		
			100					105					110				
Ala	Arg	Arg	Arg	Tyr	His	His	Ala	Asn	Arg	Pro	Ala	Pro	Arg	Leu	Pro		
		115					120					125					
Pro	His	Ala	Arg	Ser	Pro	Gln	Gly	Arg	Leu	Leu	Ala	Gly	Gly	Arg	Ala		
	130					135					140						
Glu	Arg	Gly	Arg	Cys	Leu	Asp	Arg	Glu	Met	Ala	Gly	Ala	Asp	Pro	Ile		
145					150					155				160			
Pro	Glu	Pro	Gln	Leu	Arg	Gly	Val	Ser	Gln	Leu	Trp	Ala	Glu	Asp	Ala		
				165					170					175			
Ser	Arg	Arg	Arg	Gly	Ala	Arg	Leu	Gly	Ala	Leu	Ala	Ser	Leu	Leu	Leu		
			180					185					190				
Leu	Pro	Ala	Gln	Gly	Ala	Asp	Val	His	Leu	Gln	Tyr	Arg	Leu	Pro	Ile		
	195						200					205					
Arg	Thr	Arg	Arg	Arg	Ile	Met	Arg	Met	Asn	Ile	Thr	Ser	Val	Ala	Leu		
	210					215					220						
Met	Trp	Leu	Leu	Ala	Ala	Gln	Leu	Ala	Gln	Ala	Asp	Asp	Pro	Ile	Asn		
225					230					235				240			
Val	Ser	Lys	Thr	Gly	Thr	Val	Leu	Ser	Asp	Glu	Val	Leu	Tyr	Ser	Ile		
				245					250					255			
Gly	Gly	Gly	Ser	Ala	Val	Ser	Met	Gly	Ser	Ala	Gly	Gln	Met	Asp	Ser		
			260					265					270				
Ile	Gly	Val	Gly	Phe	Gly	Trp	Asn	Asn	Asp	Met	Met	Cys	Gly	Asn	Met		
	275						280					285					
Asn	Leu	Ser	Thr	Thr	Leu	Glu	Asn	Gln	Leu	Asn	Gly	Ala	Thr	Gln	Gly		
	290					295					300						
Phe	Gln	Asn	Ile	Met	Gly	Ser	Val	Ile	Gln	Asn	Ala	Thr	Gly	Ala	Val		
305					310					315					320		
Met	Ser	Leu	Pro	Ala	Leu	Ile	Ile	Gln	Arg	Ala	Asn	Pro	Gln	Leu	Tyr		
				325					330					335			
Asn	Leu	Ile	Thr	Asn	Gly	Ile	Leu	Gln	Ala	Arg	Ile	Asp	Tyr	Asp	Arg		
			340					345					350				
Ser	Lys	Gly	Thr	Cys	Lys	Thr	Ile	Ala	Glu	Lys	Met	Ala	Asp	Ile	Ala		
	355						360					365					
Gly	Glu	Gln	Thr	Gly	Trp	Gly	Lys	Ile	Ala	Glu	Gly	Gln	Ala	Leu	Gly		
	370					375					380						
Ala	Thr	Leu	Ala	Ser	Asp	Gly	Lys	Asp	Ala	Val	Ser	Ala	Leu	Glu	Ala		
385					390					395				400			
Val	Glu	Lys	Lys	Gly	Gly	Asn	Asp	Gly	Val	Thr	Trp	Val	Gly	Gly	Asp		
				405					410					415			
Lys	Ala	Gly	Gly	Ser	Gly	Gln	Lys	Pro	Ile	Arg	Ile	Val	Asn	Asp	Val		
			420					425					430				
Thr	Arg	Ala	Gly	Tyr	Asn	Leu	Leu	Thr	Ser	Arg	Ser	Val	Asn	Asp	Ser		
	435					440						445					
Ser	Ser	Val	Pro	Ser	Ala	Thr	Cys	Asn	Asn	Gly	Leu	Val	Cys	Asn	Thr		
	450					455					460						
Trp	Ser	Ser	Pro	Gln	Glu	Ala	Ala	Ala	Phe	Ala	Thr	Arg	Val	Leu	Gly		
465					470					475				480			
Glu	Gln	Gln	Gln	Gln	Thr	Cys	Glu	Gly	Cys	Gln	Lys	Thr	Val	Thr	Ala		
				485					490					495			
Ala	Gly	Val	Gly	Leu	Thr	Pro	Leu	Ile	Gln	Glu	Thr	Tyr	Asp	Lys	Lys		

				500						505					510				
Leu	Gln	Ser		Leu	Gln	Glu	Leu	Leu	Ser	Lys	Ser	Lys	Pro	Leu	Thr	Ala			
		515						520					525						
Glu	Asn	Leu	Ala	Ala	Ala	Gly	Thr	Asp	Ala	Leu	Pro	Ile	Thr	Arg	Gly				
	530					535					540								
Val	Ile	Glu	Ala	Leu	Arg	Asp	Glu	Arg	Asp	Gln	Asp	Val	Leu	Ala	Arg				
545					550				555						560				
Arg	Leu	Ala	Ser	Asp	Val	Ser	Leu	Met	Asp	Val	Leu	Ser	Lys	Ala	Leu				
			565						570					575					
Leu	Leu	Gln	Arg	Leu	Met	Phe	Ala	Gly	Ala	Lys	Glu	Pro	Asn	Val	Ala				
		580						585					590						
Ala	Asn	Gly	Leu	Ala	Thr	Gln	Ala	Val	Asp	Gln	Gln	Thr	Ser	Leu	Leu				
	595						600					605							
Gln	Gln	Glu	Ile	Ser	Asn	Leu	Lys	Thr	Glu	Leu	Glu	Leu	Arg	Arg	Glu				
	610					615					620								
Leu	Ala	Ser	Asn	Ser	Pro	Met	Arg	Val	Ile	Glu	Arg	Gly	Gln	Gln	Arg				
625					630				635						640				
Ala	Ser	Gly	Ser	Ser	Gly	Val	Phe	Glu	Ser	Ala	Pro	Asp	Ala	Asp	Arg				
			645						650					655					
Leu	Asp	Arg	Leu	Gln	Ala	Pro	Ser	Ala	Gly	Gly	Lys	Ser	Gly	Gly					
			660					665				670							
Arg	Pro																		

<210> 52
 <211> 375
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 52																			
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ggcatggaat	tcccagacag	gtgtaccccg	aagcgttgg	cccagggctg	cgcgaggtgg														180
gtggaatctt	ctccggcgac	atgtggggga	acctctatcc	gcgcagcggc	ttcctgcacc														240
agaccgacga	ctacaagacg	gcagccgtca	tcgcccagcg	cgccggcgat	atcaccacgc														300
gaatcggcga	gctccacgtc	tacctcccca	tgcgcgacgc	ccccaaggac	ggctactggc														360
cggcggggcga	gctga																		375

<210> 53
 <211> 124
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 53																			
Ser	Ala	Ile	Leu	Val	Ala	Pro	Arg	Ser	Ala	Gly	Ser	Pro	Ala	Pro	Leu				
1				5					10					15					
Gly	Thr	Phe	Ala	Leu	Ala	Pro	Pro	Ser	Arg	Trp	Cys	Arg	Thr	Phe	Ser				
		20						25					30						
Ala	His	Trp	Thr	Pro	Leu	Ala	Gly	Gly	Met	Glu	Phe	Pro	Ser	Arg	Cys				
		35					40					45							
Thr	Pro	Lys	Arg	Trp	Ser	Gln	Gly	Cys	Ala	Arg	Trp	Val	Glu	Ser	Ser				
		50				55				60									
Pro	Ala	Thr	Cys	Gly	Gly	Thr	Ser	Ile	Arg	Ala	Ala	Ala	Ser	Cys	Thr				
65					70				75					80					
Arg	Pro	Thr	Thr	Thr	Arg	Arg	Gln	Pro	Ser	Ser	Pro	Ser	Ala	Pro	Ala				
			85					90						95					
Ile	Ser	Pro	Arg	Glu	Ser	Ala	Ser	Ser	Thr	Ser	Thr	Ser	Pro	Cys	Ala				
			100					105					110						

Gln Pro Pro Arg Thr Ala Thr Gly Arg Arg Ala Ser
 115 120

<210> 54
 <211> 612
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 54
 gcctcaactg cgcggtgttt cccaactctg ggccgaagac gcaagccgctc gacgggggagc 60
 acgcctgggc gctctggcgt ccctactcct gctgccagcg caaggggagc atgttcatct 120
 gcagtaccga cttccaataa ggacacggag acgaatcatg cgaatgaaca tcacctcggt 180
 cgcgctaattg tggctgctcg cagcgcaact tgcccaggcc gacgacccga tcaacgtgtc 240
 caagaccggc acggtgctca gcgacgaggt cctctacagc attggcggcg gcagtgcggt 300
 gagcatgggc agcgccggcc agatggactc gatcggcgctc ggcttcggct ggaacaacga 360
 catgatgtgc ggaaacatga acctgagcac caccctggag aaccagctca acggtgccac 420
 acagggtttc cagaacatca tgggctcagt catccagaac gcgaccggcg cgggtcatgtc 480
 gctgccggcg ttgatcatcc agcgcgcgaa ccctcagctc tacaacctga tcaccaatgg 540
 catcctgcag gcgcggatcg actacgaccg ctcgaaaggg acttgcaaaa cgatcgccga 600
 aaagatggct ga 612

<210> 55
 <211> 203
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 55
 Ala Ser Thr Ala Arg Cys Phe Pro Thr Leu Gly Arg Arg Arg Lys Pro
 1 5 10 15
 Ser Thr Gly Ser Thr Pro Gly Arg Ser Gly Val Pro Thr Pro Ala Ala
 20 25 30
 Ser Ala Arg Gly Arg Cys Ser Ser Ala Val Pro Thr Ser Asn Lys Asp
 35 40 45
 Thr Glu Thr Asn His Ala Asn Glu His His Leu Gly Arg Ala Asn Val
 50 55 60
 Ala Ala Arg Ser Ala Thr Cys Pro Gly Arg Arg Pro Asp Gln Arg Val
 65 70 75 80
 Gln Asp Arg His Gly Ala Gln Arg Arg Gly Pro Leu Gln His Trp Arg
 85 90 95
 Arg Gln Cys Gly Glu His Gly Gln Arg Arg Pro Asp Gly Leu Asp Arg
 100 105 110
 Arg Arg Leu Arg Leu Glu Gln Arg His Asp Val Arg Lys His Glu Pro
 115 120 125
 Glu His His Pro Gly Glu Pro Ala Gln Arg Cys His Thr Gly Phe Pro
 130 135 140
 Glu His His Gly Leu Ser His Pro Glu Arg Asp Arg Arg Gly His Val
 145 150 155 160
 Ala Ala Gly Val Asp His Pro Ala Arg Glu Pro Ser Ala Leu Gln Pro
 165 170 175
 Asp His Gln Trp His Pro Ala Gly Ala Asp Arg Leu Arg Pro Leu Glu
 180 185 190
 Arg Asp Leu Gln Asn Asp Arg Arg Lys Asp Gly
 195 200

<210> 56
 <211> 798
 <212> DNA

<213> Pseudomonas aeruginosa

<400> 56

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gtcctgggtca	cgctcgtcgc	gcagcgcctc	gatgacgccg	cgggtaattg	gcagagcatc	120
ggtgccggcc	gcagccagggt	tctctgcagt	cagtggtttg	ctcttcgaca	gcagctcctg	180
cagcgactgg	agcttcttgt	cgtaggtctc	ctggatcagc	ggggtgaggc	cgacgccagc	240
agccgtcacc	gtcttctggc	agccttcgca	ggtctgttgc	tggtgctccc	ccagtaccgg	300
ggtggcgaat	gcggcggcct	cctgggggga	ggaccaagtg	ttgcagacca	ggccgttggt	360
gcaagtggcg	gaaggcacgc	tcgacgaatc	attcaccgag	cggctgggtca	acaggttgta	420
gcccgcgccg	gtcacgtcgt	tgacgatgcg	aatgggcttc	tggccggagc	cgccggcctt	480
gtctccacca	acccagggtta	cgccatcggt	gccgcctttc	ttctccactg	cttcgagggc	540
ggatacggcg	tctttcccggt	cagaggccag	tgtggcgccc	agggcttggt	cttcggcgat	600
tttccccccag	ccgggtctgct	cgccagcgat	gtcagccatc	ttttcggcga	tcgttttgca	660
agtccttttc	gagcgggtcgt	agtcgatccg	cgcctgcagg	atgccattgg	tgatcagggt	720
gtagagctga	gggttcgcgc	gctggatgat	caacgccggc	agcgacatga	ccgcgccgggt	780
cgcgttctgg	atgactga					798

<210> 57

<211> 265

<212> PRT

<213> Pseudomonas aeruginosa

<400> 57

Gln	Cys	Leu	Ala	Glu	His	Val	His	Gln	Gly	Asp	Ile	Gly	Arg	Gln	Ala	
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Ala	Arg	Gln	Asp	Val	Leu	Val	Thr	Leu	Val	Ala	Gln	Arg	Leu	Asp	Asp	
		20						25					30			
Ala	Ala	Gly	Asn	Trp	Gln	Ser	Ile	Gly	Ala	Gly	Arg	Ser	Gln	Val	Leu	
		35					40					45				
Cys	Ser	Gln	Trp	Phe	Ala	Leu	Arg	Gln	Gln	Leu	Leu	Gln	Arg	Leu	Glu	
	50					55				60						
Leu	Leu	Val	Val	Gly	Leu	Leu	Asp	Gln	Arg	Gly	Glu	Ala	Asp	Ala	Ser	
65				70					75					80		
Ser	Arg	His	Arg	Leu	Ala	Ala	Phe	Ala	Gly	Leu	Leu	Leu	Leu	Leu		
			85					90					95			
Pro	Gln	Tyr	Pro	Gly	Gly	Glu	Cys	Gly	Gly	Leu	Leu	Gly	Gly	Gly	Pro	
		100						105					110			
Ser	Val	Ala	Asp	Gln	Ala	Val	Val	Ala	Ser	Gly	Gly	Arg	His	Ala	Arg	
		115					120					125				
Arg	Ile	Ile	His	Arg	Ala	Ala	Gly	Gln	Gln	Val	Val	Ala	Arg	Pro	Gly	
	130				135						140					
His	Val	Val	Asp	Asp	Ala	Asn	Gly	Leu	Leu	Ala	Gly	Ala	Ala	Gly	Leu	
145				150					155					160		
Val	Ser	Thr	Asn	Pro	Gly	Tyr	Ala	Ile	Val	Ala	Ala	Phe	Leu	Leu	His	
			165					170					175			
Cys	Phe	Glu	Gly	Gly	Tyr	Gly	Val	Phe	Pro	Val	Arg	Gly	Gln	Cys	Gly	
		180						185				190				
Ala	Gln	Gly	Leu	Ala	Phe	Gly	Asp	Phe	Pro	Pro	Ala	Gly	Leu	Leu	Ala	
		195				200					205					
Ser	Asp	Val	Ser	His	Leu	Phe	Gly	Asp	Arg	Phe	Ala	Ser	Pro	Phe	Arg	
	210				215					220						
Ala	Val	Val	Val	Asp	Pro	Arg	Leu	Gln	Asp	Ala	Ile	Gly	Asp	Gln	Val	
225				230					235					240		
Val	Glu	Leu	Arg	Val	Arg	Ala	Leu	Asp	Asp	Gln	Arg	Arg	Gln	Arg	His	
			245					250					255			
Asp	Arg	Ala	Gly	Arg	Val	Leu	Asp	Asp								
		260					265									

<210> 58
 <211> 321
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 58
 ttctgtcgagc gtgccttccg ccacttgcaa caacggcctg gtctgcaaca cttggctcctc 60
 cccccaggag gccgccgcat tcgccacccg ggtactgggg gagcaacagc aacagacctg 120
 cgaaggctgc cagaagacgg tgacggctgc tggcgctcggc ctcaccccg c tgatccagga 180
 gacctacgac aagaagctcc agtcgctgca ggagctgctg tcgaagagca aaccactgac 240
 tgcagagaac ctggctgcgg ccggcaccga tgctctgcca attaccccg gcgtcatcga 300
 ggcgctgcgc gacgagcgtg a 321

<210> 59
 <211> 106
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 59
 Phe Val Glu Arg Ala Phe Arg His Leu Gln Gln Arg Pro Gly Leu Gln
 1 5 10 15
 His Leu Val Leu Pro Pro Gly Gly Arg Arg Ile Arg His Pro Gly Thr
 20 25 30
 Gly Gly Ala Thr Ala Thr Asp Leu Arg Arg Leu Pro Glu Asp Gly Asp
 35 40 45
 Gly Cys Trp Arg Arg Pro His Pro Ala Asp Pro Gly Asp Leu Arg Gln
 50 55 60
 Glu Ala Pro Val Ala Ala Gly Ala Ala Val Glu Glu Gln Thr Thr Asp
 65 70 75 80
 Cys Arg Glu Pro Gly Cys Gly Arg His Arg Cys Ser Ala Asn Tyr Pro
 85 90 95
 Arg Arg His Arg Gly Ala Ala Arg Arg Ala
 100 105

<210> 60
 <211> 705
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 60
 ccaggacgtc ctggcgcgcc gcctggcgctc cgatgtctcc ctgatggacg tgctcagcaa 60
 ggcactgcta ctgcagcgcc tgatgttcgc cggcgccaag gagcccaacg tcgccgcca 120
 cggcctggcc acccaagccg tcgatcagca gaccagcctc ctgcagcagg agatctccaa 180
 tctcaagacc gaactggaac tccgtcgcga gttggccagc aactcccca tgctgggtcat 240
 cgagcgcggg caacaacg cctcagggc cagtggcgctg ttcgagtcgg cggccgatgc 300
 cgatcgctc gatcgctgc aggcacctc tgccgcggc ggcaagtcgg gagggagacc 360
 gtgatggcag atacgtcac caccgaaag cttctcggtc agctactggt cggagtgtg 420
 atcgatcatc gactggcagt ggtcggtacg ctgctcagtc tcttcgccct gaaccacttc 480
 ggtggcatcc agggcctgga ggcctggcg caaagcaact actggagctt gttcgctggt 540
 cggcgctgc tgtactgcgc cctggccatc gctggttcc ggcagcgcaa ggaactgagc 600
 gcgcatgagc ggcagcgcat tcggcgatc gagatcctgg tgctgttgct ggtcctgctc 660
 atcgaattca gcaaagccta cttccgcacg ggaggcgag catga 705

<210> 61
 <211> 234
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 61
Pro Gly Arg Pro Gly Ala Pro Pro Gly Val Arg Cys Leu Pro Asp Gly
1 5 10 15
Arg Ala Gln Gln Gly Thr Ala Thr Ala Ala Pro Asp Val Arg Arg Arg
20 25 30
Gln Gly Ala Gln Arg Arg Arg Gln Arg Pro Gly His Pro Ser Arg Arg
35 40 45
Ser Ala Asp Gln Pro Pro Ala Ala Gly Asp Leu Gln Ser Gln Asp Arg
50 55 60
Thr Gly Thr Pro Ser Arg Val Gly Gln Gln Leu Pro His Ala Gly His
65 70 75 80
Arg Ala Arg Ala Thr Arg Leu Arg Val Gln Trp Arg Val Arg Val
85 90 95
Gly Ala Arg Cys Arg Ser Pro Arg Ser Pro Ala Gly Pro Leu Cys Arg
100 105 110
Arg Arg Gln Val Gly Arg Glu Thr Val Met Ala Asp Thr Leu Thr Thr
115 120 125
Arg Lys Leu Leu Gly Gln Leu Leu Val Gly Val Leu Ile Val Ile Gly
130 135 140
Leu Ala Val Val Gly Thr Leu Leu Ser Leu Phe Ala Leu Asn His Phe
145 150 155 160
Gly Gly Ile Gln Gly Leu Glu Ala Trp Arg Gln Ser Asn Tyr Trp Ser
165 170 175
Leu Phe Ala Trp Arg Ala Leu Leu Tyr Cys Ala Leu Ala Ile Ala Trp
180 185 190
Phe Arg Gln Arg Lys Glu Leu Ser Ala His Glu Arg Gln Arg Ile Arg
195 200 205
Arg Ile Glu Ile Leu Val Leu Leu Val Leu Leu Ile Glu Phe Ser
210 215 220
Lys Ala Tyr Phe Arg Thr Gly Gly Ala Ala
225 230

<210> 62
<211> 525
<212> DNA
<213> Pseudomonas aeruginosa

<400> 62
tgttcgccgg cgccaaggag cccaacgtcg ccgccaacgg cctggccacc caagccgtcg 60
atcagcagac cagcctcctg cagcaggaga tctccaatct caagaccgaa ctggaactcc 120
gtcgcgagtt ggccagcaac tcccccatgc gggatcatcga gcgcgggcaa caacgcgcct 180
caggggtccag tggcgtgttc gagtcggcgc ccgatgccga tcgcctcgat cgctgcagg 240
ccccctctgc cgccggcggc aagtcgggag ggagaccgtg atggcagata cgctcaccac 300
ccgaaagctt ctcggtcagc tactgggtcgg agtgctgatc gtcatcggac tggcagtggt 360
cggtagcgtg ctcagtctct tcgccctgaa ccacttcggg ggcattccagg gcctggaggc 420
ctggcgggcaa agcaactact ggagcttggt cgctggcggg gcgctgctgt actgcgccct 480
ggccatcgcc tggttccggc agcgcaagga actgagcgcg catga 525

<210> 63
<211> 174
<212> PRT
<213> Pseudomonas aeruginosa

<400> 63
Cys Ser Pro Ala Pro Arg Ser Pro Thr Ser Pro Pro Thr Ala Trp Pro
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Pro Lys Pro Ser Ile Ser Arg Pro Ala Ser Cys Ser Arg Arg Ser Pro
20 25 30

Ile	Ser	Arg	Pro	Asn	Trp	Asn	Ser	Val	Ala	Ser	Trp	Pro	Ala	Thr	Pro
	35					40						45			
Pro	Cys	Gly	Ser	Ser	Ser	Ala	Gly	Asn	Asn	Ala	Pro	Gln	Gly	Pro	Val
	50					55					60				
Ala	Cys	Ser	Ser	Arg	Arg	Pro	Met	Pro	Ile	Ala	Ser	Ile	Ala	Cys	Arg
65				70					75					80	
Pro	Pro	Leu	Pro	Pro	Ala	Ala	Ser	Arg	Glu	Gly	Asp	Arg	Asp	Gly	Arg
				85					90					95	
Tyr	Ala	His	His	Pro	Lys	Ala	Ser	Arg	Ser	Ala	Thr	Gly	Arg	Ser	Ala
			100				105						110		
Asp	Arg	His	Arg	Thr	Gly	Ser	Gly	Arg	Tyr	Ala	Ala	Gln	Ser	Leu	Arg
		115					120					125			
Pro	Glu	Pro	Leu	Arg	Trp	His	Pro	Gly	Pro	Gly	Gly	Leu	Ala	Ala	Lys
	130					135					140				
Gln	Leu	Leu	Glu	Leu	Val	Arg	Leu	Ala	Gly	Ala	Ala	Val	Leu	Arg	Pro
145					150					155					160
Gly	His	Arg	Leu	Val	Pro	Ala	Ala	Gln	Gly	Thr	Glu	Arg	Ala		
				165						170					

<210> 64
 <211> 306
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 64	
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caacagcacc aggatctcga tccgccgaat gcgctgccgc tcatgcgcgc tcagttcctt	120
gcgctgcccg aaccaggcga tggccagggc gcagtacagc agcgcccgcc aggccaacaa	180
gtccagtag ttgctttgcc gccaggcctc caggccctgg atgccaccga agtgggttcag	240
ggcgaagaga ctgagcagcg taccgaccac tgccagtccg atgacgatca gcactccgac	300
cagtag	306

<210> 65
 <211> 101
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 65	
Arg Ser Cys Cys Ala Ser Arg Ala Glu Val Gly Phe Ala Glu Phe Asp	
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Glu Gln Asp Gln Gln Gln His Gln Asp Leu Asp Pro Pro Asn Ala Leu	
20 25 30	
Pro Leu Met Arg Ala Gln Phe Leu Ala Leu Pro Glu Pro Gly Asp Gly	
35 40 45	
Gln Gly Ala Val Gln Gln Arg Pro Pro Gly Glu Gln Ala Pro Val Val	
50 55 60	
Ala Leu Pro Pro Gly Leu Gln Ala Leu Asp Ala Thr Glu Val Val Gln	
65 70 75 80	
Gly Glu Glu Thr Glu Gln Arg Thr Asp His Cys Gln Ser Asp Asp Asp	
85 90 95	
Gln His Ser Asp Gln	
100	

<210> 66
 <211> 1605
 <212> DNA
 <213> Pseudomonas aeruginosa


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<400> 66
gcggcagcgc attcggcgga tgcgagatcct ggtgctgttg ctggctcctgc tcatcgaatt      60
cagcaaagcc tacttccgca cgggaggcgc agcatgacct tcatgaccaa tgactacctg      120
gagtattacc tcaccctcct cggctggatc atcaacaacg ggatctggaa catgatctcg      180
gatactggcc tggtcgcggt gccgttcgcg gccatcgatg tgcgcgaatg gctgaaagtt      240
cgtggggaag gcgccgacga gggcaacaag ggagtgctgt ctctcgcccg catcgagacg      300
catatctacg tcggctacat cgtggtcgcc ctggcgggga tcccggctcg caacgtgagc      360
ttcgacacca tcgagttcga ccagactcgc gccagcagt gccaatataa tctgccggca      420
ccggcggaaca ccggctggtc gagctccttc agcagcctgg ccggcaagag tgcgcgagatg      480
ccgctctggt gggcgatgat gcacgccctg tccaagggct tcaccagcgg cgccatcgcg      540
gccattccgt gcggcacgga tctgcggcag atgcgaatgg aagtggacaa cacgcgcgtg      600
aacaatccgc tgctggcaca agaaatcgct gatttttcca gagactgcta cgggccttcc      660
cgtgcgcggc tgttcatgcg gcaacccgac ctgggctccg tcgccgagga caacaaggcg      720
ttgcaagacc tgaactggat cggctcccga ttcttggtga acaccccggg gtactacgac      780
accgactact cgaagagtcc ccgtcagtcg tggccctaca acgccacccg cgatgccggc      840
ctgcctcagg tggcggtggt tggcggtctac ccaacctgca agcagtgggt ggctgactca      900
gggatcggct tgcgtgatcg gatcaaggac caggtggatc cggacctgat gaccagcttc      960
ctcaagtggg cgaaatggtt gaaccaggac gaggtgaccg aggctgtcat tcgccagggtg     1020
atctcaccct ccagccaggt caagggtaac gtctacaccg attacggcgg gcaggtgggc     1080
ggcacctgtt ggaacggcat cgcgagaacc gcaggaacct tcggcgttgc ggtgggcagc     1140
ttggcatact tcccggcgat ggatatggct cgccaggcac tgcgatgggt gatgtcgttc     1200
ctgaagatgg caatggatcat ctgcattccg atggtcctgg tcatcggcac ctatcaactg     1260
aaagttgcca tgacgatgac ggtcgtcttc tttgcgatga tgttcgtcga cttctggttt     1320
cagttagcca gatatatcga cagcacgata cttgatgctt tctatggttc gggatcacca     1380
catctttcat tcaacccagt catggggctg aatacggcta ctcaagatgc gatcttgaac     1440
ttcgttatgg gttctatggt cattgtttta ccactactgt ggatgacagc gatcggctgg     1500
tccggaattc aagcagggtc tgttctgaac ggattgagca gagggactga aggagttcaa     1560
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<210> 67

<211> 534

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 67

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      20              25              30
Thr Phe Met Thr Asn Asp Tyr Leu Glu Tyr Tyr Leu Thr Leu Leu Gly
      35              40              45
Trp Ile Ile Asn Asn Gly Ile Trp Asn Met Ile Ser Asp Thr Gly Leu
      50              55              60
Phe Ala Val Pro Phe Ala Ala Ile Val Met Arg Glu Trp Leu Lys Val
      65              70              75              80
Arg Gly Glu Gly Ala Asp Glu Gly Asn Lys Gly Val Leu Ser Leu Ala
      85              90              95
Arg Ile Glu Thr His Ile Tyr Val Gly Tyr Ile Val Val Ala Leu Ala
      100             105             110
Gly Ile Pro Val Val Asn Val Ser Phe Asp Thr Ile Glu Phe Asp Gln
      115             120             125
Thr Arg Ala Gln Gln Cys Gln Tyr Asn Leu Pro Ala Pro Ala Asp Thr
      130             135             140
Gly Trp Ser Ser Ser Phe Ser Ser Leu Ala Gly Lys Ser Ala Gln Met
      145             150             155             160
Pro Leu Trp Trp Ala Met Met His Ala Leu Ser Lys Gly Phe Thr Ser
      165             170             175
Gly Ala Ile Ala Ala Ile Pro Cys Gly Thr Asp Leu Arg Gln Met Arg
      180             185             190

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Met	Glu	Val	Asp	Asn	Thr	Arg	Val	Asn	Asn	Pro	Leu	Leu	Ala	Gln	Glu
	195						200					205			
Ile	Ala	Asp	Phe	Ser	Arg	Asp	Cys	Tyr	Gly	Pro	Ser	Arg	Ala	Arg	Leu
	210					215					220				
Phe	Met	Arg	Gln	Pro	Asp	Leu	Gly	Ser	Val	Ala	Glu	Asp	Asn	Lys	Ala
225					230					235					240
Leu	Gln	Asp	Leu	Asn	Trp	Ile	Gly	Ser	Arg	Phe	Leu	Leu	Asn	Thr	Pro
				245					250					255	
Gly	Tyr	Tyr	Asp	Thr	Asp	Tyr	Ser	Lys	Ser	Pro	Arg	Gln	Ser	Trp	Pro
			260					265					270		
Tyr	Asn	Ala	Thr	Arg	Asp	Ala	Gly	Leu	Pro	Gln	Val	Gly	Gly	Gly	Gly
	275						280					285			
Gly	Tyr	Pro	Thr	Cys	Lys	Gln	Trp	Trp	Ala	Asp	Ser	Gly	Ile	Gly	Leu
	290					295					300				
Arg	Asp	Arg	Ile	Lys	Asp	Gln	Val	Asp	Pro	Asp	Leu	Met	Thr	Ser	Phe
305					310					315					320
Leu	Lys	Trp	Ala	Lys	Trp	Leu	Asn	Gln	Asp	Glu	Val	Thr	Glu	Ala	Val
				325					330					335	
Ile	Arg	Gln	Val	Ile	Ser	Pro	Ser	Ser	Gln	Val	Lys	Gly	Asn	Val	Tyr
		340					345						350		
Thr	Asp	Tyr	Gly	Gly	Gln	Val	Gly	Gly	Thr	Val	Trp	Asn	Gly	Ile	Ala
	355						360					365			
Arg	Thr	Ala	Gly	Thr	Phe	Gly	Val	Ala	Val	Gly	Ser	Leu	Ala	Tyr	Phe
	370					375					380				
Pro	Ala	Met	Asp	Met	Val	Arg	Gln	Ala	Leu	Pro	Met	Val	Met	Ser	Phe
385					390					395					400
Leu	Lys	Met	Ala	Met	Val	Ile	Cys	Ile	Pro	Met	Val	Leu	Val	Ile	Gly
				405					410					415	
Thr	Tyr	Gln	Leu	Lys	Val	Ala	Met	Thr	Met	Thr	Val	Val	Phe	Phe	Ala
		420						425					430		
Met	Met	Phe	Val	Asp	Phe	Trp	Phe	Gln	Leu	Ala	Arg	Tyr	Ile	Asp	Ser
	435						440					445			
Thr	Ile	Leu	Asp	Ala	Phe	Tyr	Gly	Ser	Gly	Ser	Pro	His	Leu	Ser	Phe
	450					455					460				
Asn	Pro	Val	Met	Gly	Leu	Asn	Thr	Ala	Thr	Gln	Asp	Ala	Ile	Leu	Asn
465					470					475					480
Phe	Val	Met	Gly	Ser	Met	Phe	Ile	Val	Leu	Pro	Leu	Leu	Trp	Met	Thr
				485					490					495	
Ala	Ile	Gly	Trp	Ser	Gly	Ile	Gln	Ala	Gly	Ser	Val	Leu	Asn	Gly	Leu
			500					505					510		
Ser	Arg	Gly	Thr	Glu	Gly	Val	Gln	Ala	Ala	Gly	Lys	Glu	Ala	Gly	Asn
	515						520					525			
Arg	Val	Lys	Asn	Ala	Val										
	530														

<210> 68
 <211> 828
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 68	
gtcagccac cactgcttgc aggttgggta gccgccacca ccgcccacct gaggcaggcc	60
ggcatcgcggtgtggcgttgt agggccacga ctgacgggga ctcttcgagt agtcggtgtc	120
gtagtaccac ggggtgttca acaagaatcg ggagccgac cagttcaggt cttgcaacgc	180
cttggtgtcc tcggcgacgg agcccagggtc gggttgccgc atgaacagcc gcgcacggga	240
aggcccgtag cagtctctgg aaaaatcagc gatttcttgt gccagcagcg gattgttcac	300
gcgcgtgttg tccacttcca ttgcgcatctg ccgcagatcc gtgccgcacg gaatggccgc	360
gatggcgccg ctggtgaagc ccttgacag ggcgtgcac atcgcccacc agagcggcat	420

```

ctgcgcactc ttgccggcca ggctgctgaa ggagctcgac cagccgggtgt cgcgggtgc 480
cggcagattg tattggcact gctggggcgcg agtctgggtcg aactcgatgg tgtcgaagct 540
cacgttgacg accgggatcc ccgccagggc gaccacgatg tagccgacgt agatatgcgt 600
ctcgatgcgg gcgagagaca gcactccctt gttgccctcg tcggcgcctt cccacgaac 660
tttcagccat tcgcgcatca cgatggccgc gaacggcacc gcgaacaggc cagtatccga 720
gatcatgttc cagatcccgt tgttgatgat ccagccgagg aggggtgaggt aatactccag 780
gtagtcattg gtcatgaagg tcatgctgcg cctcccgtgc ggaagtag 828

```

```

<210> 69
<211> 275
<212> PRT
<213> Pseudomonas aeruginosa

```

```

<400> 69
Val Ser Pro Pro Leu Leu Ala Gly Trp Val Ala Ala Thr Thr Ala His
1      5      10      15
Leu Arg Gln Ala Gly Ile Ala Gly Gly Val Val Gly Pro Arg Leu Thr
20     25     30
Gly Thr Leu Arg Val Val Gly Val Val Pro Arg Gly Val Gln Gln
35     40     45
Glu Ser Gly Ala Asp Pro Val Gln Val Leu Gln Arg Leu Val Val Leu
50     55     60
Gly Asp Gly Ala Gln Val Gly Leu Pro His Glu Gln Pro Arg Thr Gly
65     70     75     80
Arg Pro Val Ala Val Ser Gly Lys Ile Ser Asp Phe Leu Cys Gln Gln
85     90     95
Arg Ile Val His Ala Arg Val Val His Phe His Ser His Leu Pro Gln
100    105    110
Ile Arg Ala Ala Arg Asn Gly Arg Asp Gly Ala Ala Gly Glu Ala Leu
115    120    125
Gly Gln Gly Val His His Arg Pro Pro Glu Arg His Leu Arg Thr Leu
130    135    140
Ala Gly Gln Ala Ala Glu Gly Ala Arg Pro Ala Gly Val Arg Arg Cys
145    150    155    160
Arg Gln Ile Val Leu Ala Leu Leu Gly Ala Ser Leu Val Glu Leu Asp
165    170    175
Gly Val Glu Ala His Val Asp Asp Arg Asp Pro Arg Gln Gly Asp His
180    185    190
Asp Val Ala Asp Val Asp Met Arg Leu Asp Ala Gly Glu Arg Gln His
195    200    205
Ser Leu Val Ala Leu Val Gly Ala Phe Pro Thr Asn Phe Gln Pro Phe
210    215    220
Ala His His Asp Gly Arg Glu Arg His Arg Glu Gln Ala Ser Ile Arg
225    230    235    240
Asp His Val Pro Asp Pro Val Val Asp Asp Pro Ala Glu Glu Gly Glu
245    250    255
Val Ile Leu Gln Val Val Ile Gly His Glu Gly His Ala Ala Pro Pro
260    265    270
Val Arg Lys
275

```

```

<210> 70
<211> 519
<212> DNA
<213> Pseudomonas aeruginosa

```

```

<400> 70
ctacctggag tattacctca ccctcctcgg ctggatcatc aacaacggga tctggaacat 60

```

```

gatctcggat actggcctgt tcgcggtgcc gttcgcggcc atcgtgatgc gcgaatggct 120
gaaagtccgt ggggaaggcg ccgacgaggg caacaaggga gtgctgtctc tcgcccgcac 180
cgagacgcat atctacgtcg gctacatcgt ggtcgccctg gcggggatcc cggtcgtcaa 240
cgtgagcttc gacaccatcg agttcgacca gactcgcgcc cagcagtgcc aatacaatct 300
gccggcaccg gcggacaccg gctggtcgag ctccttcagc agcctggccg gcaagagtgc 360
gcagatgccg ctctgggtggg cgatgatgca cgccctgtcc aagggttca ccagcggcgc 420
catcgcggcc attccgtgcg gcacggatct gcggcagatg cgaatggaag tggacaacac 480
gcgcgtgaac aatccgctgc tggcacaaga aatcgctga 519

```

<210> 71
 <211> 172
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 71
Leu Pro Gly Val Leu Pro His Pro Pro Arg Leu Asp His Gln Gln Arg
 1          5          10          15
Asp Leu Glu His Asp Leu Gly Tyr Trp Pro Val Arg Gly Ala Val Arg
 20          25          30
Gly His Arg Asp Ala Arg Met Ala Glu Ser Ser Trp Gly Arg Arg Arg
 35          40          45
Arg Gly Gln Gln Gly Ser Ala Val Ser Arg Pro His Arg Asp Ala Tyr
 50          55          60
Leu Arg Arg Leu His Arg Gly Arg Pro Gly Gly Asp Pro Gly Arg Gln
 65          70          75          80
Arg Glu Leu Arg His His Arg Val Arg Pro Asp Ser Arg Pro Ala Val
 85          90          95
Pro Ile Gln Ser Ala Gly Thr Gly Gly His Arg Leu Val Glu Leu Leu
100          105          110
Gln Gln Pro Gly Arg Gln Glu Cys Ala Asp Ala Ala Leu Val Gly Asp
115          120          125
Asp Ala Arg Pro Val Gln Gly Leu His Gln Arg Arg His Arg Gly His
130          135          140
Ser Val Arg His Gly Ser Ala Ala Asp Ala Asn Gly Ser Gly Gln His
145          150          155          160
Ala Arg Glu Gln Ser Ala Ala Gly Thr Arg Asn Arg
165          170

```

<210> 72
 <211> 333
 <212> DNA
 <213> *Pseudomonas aeruginosa*

```

<400> 72
cagtctctgg aaaaatcagc gatttcttgt gccagcagcg gattgttcac gcgcgtgttg 60
tccacttcca ttcgcatctg ccgcagatcc gtgccgcacg gaatggccgc gatggcgccg 120
ctggtgaagc ccttgacag ggcgtgcac atcgcccacc agagcggcat ctgcgcactc 180
ttgccggcca ggctgctgaa ggagctcgac cagccggtgt ccgccggtgc cggcagattg 240
tattggcact gctgggcgcg agtctggtcg aactcgatgg tgtcgaagct cacgttgacg 300
accgggatcc ccgccagggc gaccacgatg tag 333

```

<210> 73
 <211> 110
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 73
Gln Ser Leu Glu Lys Ser Ala Ile Ser Cys Ala Ser Ser Gly Leu Phe

```

1	5	10	15
Thr Arg Val	Leu Ser Thr Ser Ile	Arg Ile Cys Arg Arg	Ser Val Pro
	20	25	30
His Gly Met	Ala Ala Met Ala Pro	Leu Val Lys Pro	Leu Asp Arg Ala
	35	40	45
Cys Ile Ile	Ala His Gln Ser Gly	Ile Cys Ala Leu Leu	Pro Ala Arg
	50	55	60
Leu Leu Lys	Glu Leu Asp Gln Pro Val	Ser Ala Gly Ala Gly	Arg Leu
65	70	75	80
Tyr Trp His	Cys Trp Ala Arg Val Trp	Ser Asn Ser Met Val	Ser Lys
	85	90	95
Leu Thr Leu	Thr Thr Gly Ile Pro	Ala Arg Ala Thr Thr	Met
	100	105	110

<210> 74
 <211> 300
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 74	
ctgaaaccag aagtcgacga acatcatcgc aaagaagacg accgtcatcg tcatggcaac	60
tttcagttga taggtgccga tgaccaggac catcggaatg cagatgacca ttgccatctt	120
caggaacgac atcaccatcg gcagtgcctg gcggaccata tccatcgccg ggaagtatgc	180
caagctgccc accgcaacgc cgaagggtcc tgcggttctc gcgatgccgt tccacacggt	240
gccgcccacc tgcccgcctg aatcggtgta gacgttacct ttgacctggc tggaggggtga	300

<210> 75
 <211> 99
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 75
Leu Lys Pro Glu Val Asp Glu His His Arg Lys Glu Asp Asp Arg His
1 5 10 15
Arg His Gly Asn Phe Gln Leu Ile Gly Ala Asp Asp Gln Asp His Arg
20 25 30
Asn Ala Asp Asp His Cys His Leu Gln Glu Arg His His His Arg Gln
35 40 45
Cys Leu Ala Asp His Ile His Arg Arg Glu Val Cys Gln Ala Ala His
50 55 60
Arg Asn Ala Glu Gly Ser Cys Gly Ser Arg Asp Ala Val Pro His Gly
65 70 75 80
Ala Ala His Leu Pro Ala Val Ile Gly Val Asp Val Thr Leu Asp Leu
85 90 95
Ala Gly Gly

<210> 76
 <211> 306
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 76	
cgtctacacc gattacggcg ggcaggtggg cggcaccgtg tggaacggca tcgcgagaac	60
cgcaggaacc ttcggcgctg cggtgggcag cttggcatac ttcccggcga tggatatggt	120
ccgccaggca ctgccgatgg tgatgtcgtt cctgaagatg gcaatggtca tctgcattcc	180

gatggtcctg gtcatcggca cctatcaact gaaagttgcc atgacgatga cggtcgtctt 240
 ctttgcgatg atgttcgctg acttctgggt tcagtttagcc agatatatcg acagcacgat 300
 acttga 306

<210> 77
 <211> 101
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 77
 Arg Leu His Arg Leu Arg Arg Ala Gly Gly Arg His Arg Val Glu Arg
 1 5 10 15
 His Arg Glu Asn Arg Arg Asn Leu Arg Arg Cys Gly Gly Gln Leu Gly
 20 25 30
 Ile Leu Pro Gly Asp Gly Tyr Gly Pro Pro Gly Thr Ala Asp Gly Asp
 35 40 45
 Val Val Pro Glu Asp Gly Asn Gly His Leu His Ser Asp Gly Pro Gly
 50 55 60
 His Arg His Leu Ser Thr Glu Ser Cys His Asp Asp Gly Arg Leu
 65 70 75 80
 Leu Cys Asp Asp Val Arg Arg Leu Leu Val Ser Val Ser Gln Ile Tyr
 85 90 95
 Arg Gln His Asp Thr
 100

<210> 78
 <211> 387
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 78
 gtgatagcag gatgcctccc tttgggagcc aggagattga tgatgaacgc gcacaccaac 60
 aaaggctttg cctcccggat cggttttggg ctgggtatgc ttgtgcgttt ctgcctgcat 120
 gatcgccgtc cagctctacg ttgggttaag cgagtttagcc tattcttggt agtagctctt 180
 gtagtgtcac agaattttat gtggcttgct ggggtatcaa tgactctact gtgtgtcttt 240
 ctgggtggggt ttgccttggg taaaggggac atctccgtct ctaaagggtc tccaagtcga 300
 gatgtctcaa ctatgacttc acaagctgaa actgaatctg tagcagagct gtttgactat 360
 caggcagcac accattaccg ggactag 387

<210> 79
 <211> 128
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 79
 Val Ile Ala Gly Cys Leu Pro Leu Gly Ala Arg Arg Leu Met Met Asn
 1 5 10 15
 Ala His Thr Asn Lys Gly Phe Ala Ser Arg Ile Gly Phe Gly Leu Gly
 20 25 30
 Met Leu Val Arg Phe Cys Leu His Asp Arg Arg Pro Ala Leu Arg Trp
 35 40 45
 Val Lys Arg Val Ser Leu Phe Leu Leu Val Ala Leu Val Val Ser Gln
 50 55 60
 Asn Phe Met Trp Leu Ala Gly Val Ser Met Thr Leu Leu Cys Val Phe
 65 70 75 80
 Leu Val Gly Phe Ala Leu Val Lys Gly Asp Ile Ser Val Ser Lys Gly
 85 90 95
 Ser Pro Ser Arg Asp Val Ser Thr Met Thr Ser Gln Ala Glu Thr Glu

	100		105		110
Ser Val Ala	Glu Leu Phe Asp Tyr	Gln Ala Ala His His	Tyr	Tyr Arg Asp	
	115		120	125	

<210> 80
 <211> 705
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> variation
 <222> (1)...(705)
 <223> N is any nucleic acid.

<400> 80

tcaaacagct	ctgctacaga	ttcagtttca	gcttgtgaag	tcatagttga	gacatctcga	60
cttggagacc	ctttagagac	ggagatgtcc	cctttaacca	aggcaaatcc	caccagaaag	120
acacacagta	gagtcattga	taccccagca	agccacataa	aattctgtga	cactacaaga	180
gctactaaca	agaataggct	aactcgttta	acccaacgta	gagctggacg	gcgatcatgc	240
aggcagaaac	gcacaagcat	acccagacca	aaaccgatcc	gggaggcaaa	gcctttgttg	300
gtgtgcgcgt	tcatcatcaa	tctcctggct	cccaaaggga	ggcatcctgc	tatcacctat	360
acgccgaaaa	agatgatttg	gcaagcatta	tggcatatta	tgccactagc	tatctgccga	420
ctggagtacc	tcatggcaac	gcgaaacgtc	gtccttcccc	atccgctgga	gcaggatatc	480
aacgagctgg	tggagaccgg	ccgctatcag	aatcgcagcg	aagtcatccg	ggcaggcttg	540
cgcttgctgc	tgcaacagga	agcccagata	ngcgccaagc	tcgaaaccct	ccgcaacgca	600
acatccagtg	ggctgatgca	actggagcgc	ggcgagtacg	acgagatcac	cagcgacgaa	660
ctggcccaat	acctcgacga	gctcggcaac	caggcgagcc	actga		705

<210> 81
 <211> 233
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 81

Ser Asn Ser	Ser Ala Thr Asp	Ser Val Ser	Ala Cys Glu Val	Ile Val
1	5	10	15	
Glu Thr Ser	Arg Leu Gly Asp	Pro Leu Glu Thr	Glu Met Ser	Pro Leu
	20	25	30	
Thr Lys Ala	Asn Pro Thr Arg	Lys Thr His Ser	Arg Val Ile Asp	Thr
	35	40	45	
Pro Ala Ser	His Ile Lys Phe	Cys Asp Thr Thr	Arg Ala Thr Asn	Lys
	50	55	60	
Asn Arg Leu	Thr Arg Leu Thr	Gln Arg Arg Ala	Gly Arg Arg Ser	Cys
	65	70	75	80
Arg Gln Lys	Arg Thr Ser Ile	Pro Arg Pro Lys	Pro Ile Arg Glu	Ala
	85	90	95	
Lys Pro Leu	Leu Val Cys Ala	Phe Ile Ile Asn	Leu Leu Ala Pro	Lys
	100	105	110	
Gly Arg His	Pro Ala Ile Thr	Tyr Thr Pro Lys	Lys Met Ile Trp	Gln
	115	120	125	
Ala Leu Trp	His Ile Met Pro	Leu Ala Ile Cys	Arg Leu Glu Tyr	Leu
	130	135	140	
Met Ala Thr	Arg Asn Val Val	Leu Pro Asp Pro	Leu Glu Gln Asp	Ile
	145	150	155	160
Asn Glu Leu	Val Glu Thr Gly	Arg Tyr Gln Asn	Arg Ser Glu Val	Ile
	165	170	175	
Arg Ala Gly	Leu Arg Leu Leu	Leu Gln Glu Ala	Gln Ile Ala Lys	
	180	185	190	

<210> 84
 <211> 591
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<220>
 <221> variation
 <222> (1)...(591)
 <223> N is any nucleic acid.

<400> 84
 cacctggtct gtcgccaccc ggtagaagac gaagtgcctg ggccgaacaa ccttaccgac 60
 attgggcatc gagtggcagt aaacgaggtg gatgctgcgc aggccagctc ccagttcttc 120
 acggctgatg ctgcctacct gttgtgggtc tgtcgcaact gcttccagcg ccgcccctat 180
 gagtgcctgg taacgtcggc gcgcggcatc gccgaagtgg ttgtgggtga agcgcaggat 240
 atcgacgatg tccgcttggg catcatgaga gatgcggtac ttggccatgc ttcagtggct 300
 cgcttggttg ccgagctcgt cgaggtattg ggccagttcg tcgctggtga tctcgtcgta 360
 ctgcgccgcg tccagttgca tcagcccact ggatgttgcg ttgcggaggg ttctgagctt 420
 ggcgcntatc tgggcttcct gttgcagcag caggcgcaag cctgcccgga tgacttcgct 480
 gcgattctga tagcggccgg tctccaccag ctcggttgata tcctgctcca gcggatcggg 540
 aaggacgacg tttcgcgttg ccatgaggta ctccagtcgg cagatagcta g 591

<210> 85
 <211> 195
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 85
 His Leu Val Cys Arg His Pro Val Glu Asp Glu Val Pro Gly Pro Asn
 1 5 10 15
 Asn Leu Thr Asp Ile Gly His Arg Val Ala Val Asn Glu Val Asp Ala
 20 25 30
 Ala Gln Ala Ser Ser Gln Phe Phe Thr Ala Asp Ala Ala Tyr Leu Leu
 35 40 45
 Trp Val Cys Arg Asn Cys Phe Gln Arg Arg Pro Tyr Glu Cys Leu Val
 50 55 60
 Thr Ser Ala Arg Gly Ile Ala Glu Val Val Val Gly Glu Ala Gln Asp
 65 70 75 80
 Ile Asp Asp Val Arg Leu Gly Ile Met Arg Asp Ala Val Leu Gly His
 85 90 95
 Ala Ser Val Ala Arg Leu Val Ala Glu Leu Val Glu Val Leu Gly Gln
 100 105 110
 Phe Val Ala Gly Asp Leu Val Val Leu Ala Ala Leu Gln Leu His Gln
 115 120 125
 Pro Thr Gly Cys Cys Val Ala Glu Gly Phe Glu Leu Gly Tyr Leu Gly
 130 135 140
 Phe Leu Leu Gln Gln Gln Ala Gln Ala Cys Pro Asp Asp Phe Ala Ala
 145 150 155 160
 Ile Leu Ile Ala Ala Gly Leu His Gln Leu Val Asp Ile Leu Leu Gln
 165 170 175
 Arg Ile Gly Lys Asp Asp Val Ser Arg Cys His Glu Val Leu Gln Ser
 180 185 190
 Ala Asp Ser
 195

<210> 86
 <211> 354
 <212> DNA

<213> Pseudomonas aeruginosa

<400> 86

```
agcatggcca agtaccgcat ctctcatgat gcccaagcgg acatcgtcga taccctgcgc      60
ttcaccacac accacttcgg cgatgccgcg cgccgacgtt accaggcact catagggggcg      120
gcgctggaag cagttgcgac agaccacaaa caggtaggca gcatcagccg tgaagaactg      180
ggagctggcc tgcgcagcat ccacctcggt tactgccact cgatgcccaa tgcgggtaag      240
gttggttcggc ccaggcactt cgtctttctac cgggtggcga cagaccaggt gctagagggtg      300
gttcgcgtgc ttcacgacgc catggatgtg gatcaacacc tgccccaacg atga          354
```

<210> 87

<211> 117

<212> PRT

<213> Pseudomonas aeruginosa

<400> 87

```
Ser Met Ala Lys Tyr Arg Ile Ser His Asp Ala Gln Ala Asp Ile Val
 1           5           10           15
Asp Ile Leu Arg Phe Thr His Asn His Phe Gly Asp Ala Ala Arg Arg
      20           25           30
Arg Tyr Gln Ala Leu Ile Gly Ala Ala Leu Glu Ala Val Ala Thr Asp
      35           40           45
Pro Gln Gln Val Gly Ser Ile Ser Arg Glu Glu Leu Gly Ala Gly Leu
      50           55           60
Arg Ser Ile His Leu Val Tyr Cys His Ser Met Pro Asn Val Gly Lys
      65           70           75           80
Val Val Arg Pro Arg His Phe Val Phe Tyr Arg Val Ala Thr Asp Gln
      85           90           95
Val Leu Glu Val Val Arg Val Leu His Asp Ala Met Asp Val Asp Gln
      100          105          110
His Leu Pro Gln Arg
      115
```

<210> 88

<211> 330

<212> DNA

<213> Pseudomonas aeruginosa

<400> 88

```
agccgcatgc aagcgggtggt cagcacgaat gcaaatgctt ggtcaggggg aatgcaatcg      60
agtgggtcaag ccaactgctat tgcgcatcaa ccatggggca cctgctgggt gatgttcacc      120
cgtagccttt tcgtgttcgc cggcgcgaa gcagcccttt ctgccttcgc gcaggccctt      180
tcgggtagggt cttttaccct tgtgaacct tcccttcgcc cttcaagccc atttcccctt      240
tgggccattt gctcctgtta cagttgctca tcgttggggc aggtgttgat ccacatccat      300
ggcgctcgtga agcagcgaa ccacctctag          330
```

<210> 89

<211> 109

<212> PRT

<213> Pseudomonas aeruginosa

<400> 89

```
Ser Arg Met Gln Ala Val Val Ser Thr Asn Ala Asn Ala Trp Ser Gly
 1           5           10           15
Gly Met Gln Ser Ser Gly Gln Ala Thr Ala Ile Ala His Gln Pro Trp
      20           25           30
Gly Thr Cys Trp Trp Met Phe Thr Arg Ser Leu Phe Val Phe Ala Gly
      35           40           45
```



```

ggggagcaag ctgtggaggc gggcgcgga gacgcggctg cggtggtggc cgatgccggc 540
gagtacaagc cttggccaga aagcctgacg aagtacctca caaaggaact gagcaaggaa 600
tacaccttcc gctactacgt gctcgatgag cgggcttttg tcggctatca ggcaagggag 660
gccgactacg agccgctacc cctaggcaag gagccgggcg gtgcagccat tctcaagtcg 720
ctgggtgaggg tcgacttcct gcgcgcgcag cggcacctcg atgacccaga tgccggtagc 780
tctgatcgcg cagagagctt gtcgcggcgt ctgagcaggt tctatcaccg caacctggag 840
aagcgtggcg acgaccatgc ggctctcaag gcgctagata cctcggagaa ggagctgaac 900
ttccacctga aggaagtctt caatgacacc ctcacgcgcc tggccaagct cggctatccg 960
ggcgtcaaca atccggagat cgtgattcgg gcggccttgg atccgaccac tgtcttgggg 1020
caagacgcca aggttacta cgtgatcccg ggcgtagctt ccgccaact gccagacagc 1080
tacaatggcc tggggttcaa gaatctggtc tacatggtgg ttgagctgct cgacttgac 1140
gagcagtgga aagccgagga tgacaagcga gctccgcttc atttggtctt cattgaggag 1200
cctgaggcgc atctgcacgc gcagatccag caggcttcca tcaggaacgt tttgcgcctc 1260
cttgaggatg ctaacgatca cgcgactttg ttccacacgc agctcgtcat caccacgcac 1320
tccccgcaca tcctctatga acgcggattc tcgcccattc ggtacttccg ccgcgtcaac 1380
gaccagttgg gccatcacac ggatgtgcgc aatctgtcgc tattcaaaac gggcgcgtcc 1440
gacgctccag cgcgcgaatt cctgcagcgg tatctgaagc tgacgcactg cgatctcttt 1500
ttttccgacg cggtgatatt ggtggaaggc aacgtcgagc gtctgctcct gcctgcaatg 1560
atcgagttgg tggccaagcg cctgcgttct tccgccctaa ccatccttga agtcggtgg 1620
gcgttcgcgc actcgttcca ggagctgac gccttcggtg ggctcacaac actggtcatc 1680
acggatctgg acagcgtgac ggtcaagacg gacgccgaga aggccgccgc gcaaggcgca 1740
ggcgtgagg gcgcggttga cggagatgac gaggacgagg acgacgacct gaagcccttc 1800
gagcttgaag acgacgacga agcagaaccg agtggaaga agaagtcaa gaagcgtggc 1860
agcacctgcc atgcacacgt ggaaggtgcc gtcacgtcca accaaaccct catcagctgg 1920
atcccgaaga agcggtcgat ggcagagctc tgggaagtca cggcggagca aaagacgctg 1980
tcgctggctg aggattccag cgctgggggt cgggtagctt accagaccaa ggtttcggtg 2040
acggtgggtg cgacgacatc acagctctgc ggccgcacac ttgaggaggc ctttggctct 2100
gagaacgcgg actggtgcca ggctgaggca aaccggtcgg tcggcctcaa gctcaagcgc 2160
gcaccgagca gccctgaaga gctggctgag aagttacacg ataggggtgg cggcaagaac 2220
ttcgacaaga cccgctttgc gctggaggta ctcgcaagcg ggccgctcaa tggctggaag 2280
gttccgcgt acatcgccga gggcttggcc tggctcgaag ccaaagtggc ccacgagctt 2340
gaggcggatg ctgccatcgc caccgaggtc gcgactattg agccgactac agccgatgtt 2400
gtcgctatca ttgttgaccc ggggcagacg gcatga 2436

```

<210> 93
<211> 811
<212> PRT
<213> *Pseudomonas aeruginosa*

```

<400> 93
Glu Glu Val Ile Met Lys Leu Gln Ala Tyr Arg Leu Gln Asn Tyr Arg
1          5          10          15
Arg Leu Arg Asp Val Val Ile Glu Leu Asp Asp Glu Ile Ser Ile Phe
20          25          30
Val Gly Ala Asn Asn Ser Gly Lys Thr Ser Ala Val Gln Gly Leu Tyr
35          40          45
Ser Met Leu Arg Gly Glu Val Lys Lys Phe Glu Leu Phe Asp Phe Ser
50          55          60
Ala Ala Leu Trp Ala Glu Ile Asp Ala Val Gly Arg Thr Pro Pro Gly
65          70          75          80
Asp Glu Asp Ala Pro Lys Arg Leu Pro Ser Ile Leu Leu Asp Leu Trp
85          90          95
Phe Arg Val Gly Glu Asp Asp Leu Ala Thr Ala Met Ser Leu Leu Pro
100         105         110
Ser Thr Glu Trp Asp Gly Lys Cys Val Gly Ile Arg Val Ala Phe Glu
115         120         125
Pro Arg Asp Ala His Glu Leu Val Trp Lys Phe His Glu Leu His Glu
130         135         140
Lys Ala Asn Asn Ala Ala Val Ala Leu Ala Ala Lys Arg Lys Ala Ala

```

145					150					155					160
Gly	Glu	Gln	Ala	Val	Glu	Ala	Gly	Ala	Glu	Asp	Ala	Ala	Ala	Val	Val
				165					170					175	
Ala	Asp	Ala	Gly	Glu	Tyr	Lys	Pro	Trp	Pro	Glu	Ser	Leu	Thr	Lys	Tyr
			180					185					190		
Leu	Thr	Lys	Glu	Leu	Ser	Lys	Glu	Tyr	Thr	Phe	Arg	Tyr	Tyr	Val	Leu
		195					200					205			
Asp	Glu	Arg	Ala	Phe	Val	Gly	Tyr	Gln	Ala	Arg	Glu	Ala	Asp	Tyr	Glu
	210					215					220				
Pro	Leu	Pro	Leu	Gly	Lys	Glu	Pro	Gly	Gly	Ala	Ala	Ile	Leu	Lys	Ser
225					230					235					240
Leu	Val	Arg	Val	Asp	Phe	Leu	Arg	Ala	Gln	Arg	His	Leu	Asp	Asp	Pro
				245					250					255	
Asp	Ala	Gly	Ser	Ser	Asp	Arg	Ala	Glu	Ser	Leu	Ser	Arg	Arg	Leu	Ser
		260						265					270		
Arg	Phe	Tyr	His	Arg	Asn	Leu	Glu	Lys	Arg	Gly	Asp	Asp	His	Ala	Ala
	275						280				285				
Leu	Lys	Ala	Leu	Asp	Thr	Ser	Glu	Lys	Glu	Leu	Asn	Phe	His	Leu	Lys
	290					295					300				
Glu	Val	Phe	Asn	Asp	Thr	Leu	Thr	Arg	Leu	Ala	Lys	Leu	Gly	Tyr	Pro
305					310					315					320
Gly	Val	Asn	Asn	Pro	Glu	Ile	Val	Ile	Arg	Ala	Ala	Leu	Asp	Pro	Thr
			325						330					335	
Thr	Val	Leu	Gly	Gln	Asp	Ala	Lys	Val	His	Tyr	Val	Ile	Pro	Gly	Val
		340						345					350		
Ala	Ser	Ala	Gln	Leu	Pro	Asp	Ser	Tyr	Asn	Gly	Leu	Gly	Phe	Lys	Asn
	355						360					365			
Leu	Val	Tyr	Met	Val	Val	Glu	Leu	Leu	Asp	Leu	His	Glu	Gln	Trp	Lys
	370					375					380				
Ala	Glu	Asp	Asp	Lys	Arg	Ala	Pro	Leu	His	Leu	Val	Phe	Ile	Glu	Glu
385					390					395					400
Pro	Glu	Ala	His	Leu	His	Ala	Gln	Ile	Gln	Gln	Val	Phe	Ile	Arg	Asn
			405						410					415	
Val	Leu	Arg	Leu	Leu	Glu	Asp	Ala	Asn	Asp	His	Ala	Thr	Leu	Phe	His
		420						425					430		
Thr	Gln	Leu	Val	Ile	Thr	Thr	His	Ser	Pro	His	Ile	Leu	Tyr	Glu	Arg
	435						440					445			
Gly	Phe	Ser	Pro	Ile	Arg	Tyr	Phe	Arg	Arg	Val	Asn	Asp	Gln	Leu	Gly
	450					455					460				
His	His	Thr	Asp	Val	Arg	Asn	Leu	Ser	Leu	Phe	Lys	Thr	Gly	Ala	Ser
465					470					475					480
Asp	Ala	Pro	Ala	Arg	Glu	Phe	Leu	Gln	Arg	Tyr	Leu	Lys	Leu	Thr	His
			485						490					495	
Cys	Asp	Leu	Phe	Ser	Asp	Ala	Val	Ile	Leu	Val	Glu	Gly	Asn	Val	
		500					505					510			
Glu	Arg	Leu	Leu	Pro	Ala	Met	Ile	Glu	Leu	Val	Ala	Lys	Arg	Leu	
	515					520					525				
Arg	Ser	Ser	Ala	Leu	Thr	Ile	Leu	Glu	Val	Gly	Gly	Ala	Phe	Ala	His
	530					535					540				
Arg	Phe	Gln	Glu	Leu	Ile	Ala	Phe	Val	Gly	Leu	Thr	Thr	Leu	Val	Ile
545					550					555					560
Thr	Asp	Leu	Asp	Ser	Val	Thr	Val	Lys	Thr	Asp	Ala	Glu	Lys	Ala	Ala
			565						570					575	
Ala	Gln	Gly	Ala	Gly	Ala	Glu	Gly	Ala	Val	Asp	Gly	Asp	Asp	Glu	Asp
		580					585					590			
Glu	Asp	Asp	Asp	Leu	Lys	Pro	Phe	Glu	Leu	Glu	Asp	Asp	Asp	Glu	Ala
	595						600					605			
Glu	Pro	Ser	Gly	Lys	Lys	Lys	Ser	Lys	Lys	Arg	Gly	Ser	Thr	Cys	His
	610					615					620				

Ala	His	Val	Glu	Gly	Ala	Val	Thr	Ser	Asn	Gln	Thr	Leu	Ile	Ser	Trp
625					630					635					640
Ile	Pro	Lys	Lys	Arg	Ser	Met	Ala	Glu	Leu	Trp	Glu	Val	Thr	Ala	Glu
				645					650						655
Gln	Lys	Thr	Leu	Ser	Leu	Ala	Glu	Asp	Ser	Ser	Ala	Gly	Val	Arg	Val
			660					665					670		
Ala	Tyr	Gln	Thr	Lys	Val	Ser	Val	Thr	Val	Gly	Ala	Thr	Thr	Ser	Gln
		675					680					685			
Leu	Cys	Gly	Arg	Thr	Leu	Glu	Glu	Ala	Phe	Gly	Leu	Glu	Asn	Ala	Asp
	690					695				700					
Trp	Cys	Gln	Ala	Glu	Ala	Asn	Arg	Ser	Val	Gly	Leu	Lys	Leu	Lys	Arg
705				710						715					720
Ala	Pro	Ser	Ser	Pro	Glu	Glu	Leu	Ala	Glu	Lys	Leu	His	Asp	Arg	Val
				725					730					735	
Val	Gly	Lys	Asn	Phe	Asp	Lys	Thr	Arg	Phe	Ala	Leu	Glu	Val	Leu	Ala
			740				745						750		
Ser	Gly	Pro	Leu	Asn	Gly	Trp	Lys	Val	Pro	Ala	Tyr	Ile	Ala	Glu	Gly
	755					760						765			
Leu	Ala	Trp	Leu	Glu	Ala	Lys	Val	Ala	His	Glu	Leu	Glu	Ala	Asp	Ala
	770					775					780				
Ala	Ile	Ala	Thr	Glu	Val	Ala	Thr	Ile	Glu	Pro	Thr	Thr	Ala	Asp	Val
785				790					795						800
Val	Ala	Ile	Ile	Val	Asp	Pro	Gly	Gln	Thr	Ala					
			805					810							

<210> 94
 <211> 570
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 94	
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ggcttggtact cgccggcatc ggccaccacc gcagccgcgt cttccgcgcc cgcctccaca	120
gcttgctccc cggcggcctt gcgcttggtcc gcaagcgcgca cagctgcgtt gttggccttc	180
tcatgtagtt catggaactt ccagacgagc tcgtgggcat cccgaggctc gaacgctacc	240
cggatcccga cgcacttgcc gtcccactca gtgctcggca gcagcgacat cgcagtggcg	300
aggctcgtctt caccgacgcg gaaccagaga tccaagagta tggacggtaa ccttttgggc	360
gcatactcat cgccaggggg cgtcctgccc accgcatcga tctcggccca cagcgccgca	420
ctgaagtcaa agagctcgaa cttcttcact tcgcccgcga gcattgagta caggccttgg	480
acggcggtatg tcttcccgt gttgttgga ccgacaaaga tagaaatttc gtcacgcagc	540
tcgatgacaa catcgcgag cggcggtag	570

<210> 95
 <211> 189
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 95	
Arg Lys Val Tyr Ser Leu Leu Ser Ser Phe Val Arg Tyr Phe Val Arg	
1 5 10 15	
Leu Ser Gly Gln Gly Leu Tyr Ser Pro Ala Ser Ala Thr Thr Ala Ala	
20 25 30	
Ala Ser Ser Ala Pro Ala Ser Thr Ala Cys Ser Pro Ala Ala Leu Arg	
35 40 45	
Leu Ala Ala Ser Ala Thr Ala Ala Leu Leu Ala Phe Ser Cys Ser Ser	
50 55 60	
Trp Asn Phe Gln Thr Ser Ser Trp Ala Ser Arg Gly Ser Asn Ala Thr	
65 70 75 80	

Arg	Ile	Pro	Thr	His	Leu	Pro	Ser	His	Ser	Val	Leu	Gly	Ser	Ser	Asp
				85					90					95	
Ile	Ala	Val	Ala	Arg	Ser	Ser	Ser	Pro	Thr	Arg	Asn	Gln	Arg	Ser	Lys
			100					105					110		
Ser	Met	Asp	Gly	Asn	Leu	Leu	Gly	Ala	Ser	Ser	Ser	Pro	Gly	Gly	Val
		115					120					125			
Leu	Pro	Thr	Ala	Ser	Ile	Ser	Ala	His	Ser	Ala	Ala	Leu	Lys	Ser	Lys
		130					135				140				
Ser	Ser	Asn	Phe	Phe	Thr	Ser	Pro	Arg	Ser	Ile	Glu	Tyr	Arg	Pro	Trp
145					150					155					160
Thr	Ala	Asp	Val	Phe	Pro	Leu	Leu	Leu	Ala	Pro	Thr	Lys	Ile	Glu	Ile
			165						170					175	
Ser	Ser	Ser	Ser	Ser	Met	Thr	Thr	Ser	Arg	Ser	Arg	Arg			
			180					185							

<210> 96
 <211> 390
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 96	
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ccgcgtcttc cgcgcccgcc tccacagctt gctccccggc ggccttgccg ttggccgcaa	120
gcgcgacagc tgcgttggtg gccttctcat gtagttcatg gaacttccag acgagctcgt	180
gggcatcccg aggctcgaac gctacccgga tcccgcagca cttgccgtcc cactcagtgc	240
tcggcagcag cgacatcgca gtggcgaggt cgtcttcacc gacgcggaac cagagatcca	300
agagtatgga cgtaacctt ttgggcgcat cctcatcgcc agggggcgctc ctgccgaccg	360
catcgatctc ggcccacagc gccgcactga	390

<210> 97
 <211> 129
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 97	
Gly Thr Ser Ser Gly Phe Leu Ala Lys Ala Cys Thr Arg Arg His Arg	
1 5 10 15	
Pro Pro Pro Gln Pro Arg Leu Pro Arg Pro Pro Pro Gln Leu Ala Pro	
20 25 30	
Arg Arg Pro Cys Ala Trp Pro Gln Ala Arg Gln Leu Arg Cys Trp Pro	
35 40 45	
Ser His Val Val His Gly Thr Ser Arg Arg Ala Arg Gly His Pro Glu	
50 55 60	
Ala Arg Thr Leu Pro Gly Ser Arg Arg Thr Cys Arg Pro Thr Gln Cys	
65 70 75 80	
Ser Ala Ala Ala Thr Ser Gln Trp Arg Gly Arg Leu His Arg Arg Gly	
85 90 95	
Thr Arg Asp Pro Arg Val Trp Thr Val Thr Phe Trp Ala His Pro His	
100 105 110	
Arg Gln Gly Ala Ser Cys Arg Pro His Arg Ser Arg Pro Thr Ala Pro	
115 120 125	
His	

<210> 98
 <211> 546
 <212> DNA

<213> Pseudomonas aeruginosa

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<400> 98
cgacagattg cgcacatccg tgtgatggcc caactgggtcg ttgacgcggc ggaagtaccg      60
aatgggagag aatccgcgtt catagaggat gtgcggggag tgcgtggtga tgacgagctg      120
cgtgtggaac aaagtcgcgt gatcgtttagc atcctcaagg aggcgcaaaa cgttcctgat      180
gaagacctgc tggatctgag cgtgcagatg cgcctcaggc tcctcaatga agaccaaagc      240
aagcggagct cgcttgatcat cctcggcctt ccactgctcg tgcaagtcga gcagctcaac      300
caccatgtag accagattct tgaacccagc gccattgtag ctgtctggca gttgggagga      360
agctacgccc gggatcacgt agtgaacctt ggcgtcttgc cccaagacag tggtcggatc      420
caaggccgcc cgaatcacga tctccggatt gttgacgccc ggatagccga gcttggccag      480
gcgcgtgagg gtgtcattga agacttcctt cagggtggaag ttcagctcct tctccgaggt      540
atctag

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<210> 99

<211> 181

<212> PRT

<213> Pseudomonas aeruginosa

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<400> 99
Arg Gln Ile Ala His Ile Arg Val Met Ala Gln Leu Val Val Asp Ala
1      5      10      15
Ala Glu Val Pro Asn Gly Arg Glu Ser Ala Phe Ile Glu Asp Val Arg
20     25     30
Gly Val Arg Gly Asp Asp Glu Leu Arg Val Glu Gln Ser Arg Val Ile
35     40     45
Val Ser Ile Leu Lys Glu Ala Gln Asn Val Pro Asp Glu Asp Leu Leu
50     55     60
Asp Leu Arg Val Gln Met Arg Leu Arg Leu Leu Asn Glu Asp Gln Met
65     70     75     80
Lys Arg Ser Ser Leu Val Ile Leu Gly Phe Pro Leu Leu Val Gln Val
85     90     95
Glu Gln Leu Asn His His Val Asp Gln Ile Leu Glu Pro Gln Ala Ile
100    105    110
Val Ala Val Trp Gln Leu Gly Gly Ser Tyr Ala Arg Asp His Val Val
115    120    125
Asn Leu Gly Val Leu Pro Gln Asp Ser Gly Arg Ile Gln Gly Arg Pro
130    135    140
Asn His Asp Leu Arg Ile Val Asp Ala Arg Ile Ala Glu Leu Gly Gln
145    150    155    160
Ala Arg Glu Gly Val Ile Glu Asp Phe Leu Gln Val Glu Val Gln Leu
165    170    175
Leu Leu Arg Gly Ile
180

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<210> 100

<211> 420

<212> DNA

<213> Pseudomonas aeruginosa

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<400> 100
cttccgcccc actgccagac agctacaatg gcctgggggtt caagaatctg gtctacatgg      60
tggttgagct gctcgacttg cactgagcagt ggaaagccga ggatgacaag cgagctccgc      120
ttcatttggt cttcattgag gagcctgagg cgcattctgca cgcgcagatc cagcaggtct      180
tcattcaggaa cgttttgctc ctctttgagg atgctaacga tcacgcgact ttgttccaca      240
cgcagctcgt catcaccacg cactccccgc acatcctcta tgaacgcgga ttctcgccca      300
ttcgggtactt ccgccgcgtc aacgaccagt tgggccatca cacggatgtg cgcaatctgt      360
cgctattcaa aacgggagcg tccgacgctc cagcgcgcga attcctgcag cggtatctga      420

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<210> 101
 <211> 139
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 101
 Leu Pro Pro Asn Cys Gln Thr Ala Thr Met Ala Trp Gly Ser Arg Ile
 1 5 10 15
 Trp Ser Thr Trp Trp Leu Ser Cys Ser Thr Cys Thr Ser Ser Gly Lys
 20 25 30
 Pro Arg Met Thr Ser Glu Leu Arg Phe Ile Trp Ser Ser Leu Arg Ser
 35 40 45
 Leu Arg Arg Ile Cys Thr Arg Arg Ser Ser Arg Ser Ser Ser Gly Thr
 50 55 60
 Phe Cys Ala Ser Leu Arg Met Leu Thr Ile Thr Arg Leu Cys Ser Thr
 65 70 75 80
 Arg Ser Ser Ser Ser Pro Arg Thr Pro Arg Thr Ser Ser Met Asn Ala
 85 90 95
 Asp Ser Arg Pro Phe Gly Thr Ser Ala Ala Ser Thr Thr Ser Trp Ala
 100 105 110
 Ile Thr Arg Met Cys Ala Ile Cys Arg Tyr Ser Lys Arg Ala Arg Pro
 115 120 125
 Thr Leu Gln Arg Ala Asn Ser Cys Ser Gly Ile
 130 135

<210> 102
 <211> 2101
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 102
 caaagcataa gaccaagatg gcacattgcc aacaaaatac ccttccccgc taccgttggt 60
 ttatcggtgt tgccagccct gatctggcgg aaaagccgcg tccatgaatc gtcattggagc 120
 ctcccatggt tcaactcctt tcctggatat ccaggaagcc gtccccacc ccaacaacca 180
 aagctgcccc aggggggattc atccttcctc tgagcagcat ggaactgctc ggcacgcctc 240
 gccgccggca gctactggag aacatctggc agcgcgcctc gctatccaag cagcaattcg 300
 aggagatcta ccggcggcca ctggccaact atgccgagct ggtccagcag ctccctgctt 360
 cggaataatca tcaccatgcc catccaggcg ggatgatcga tcacggcctg gagatcgtgg 420
 cctacgcact caaggtacgg cagacctacc tgctcccgat cggcgcagcg ccggagtcac 480
 agtcagccca ggctgaagcc tggctcgccg ccgcggcgta tggcgccctg gctcatgaca 540
 taggcaagat cgtcgtcgac ctgcagggtg agctacagga cggcagcacc tggcaccctt 600
 ggaacggacc gatcaaccag ccataccgct tcaagtacgt gaagtccgc gaataccagc 660
 tccacggcgc tgccctcagca cttctcatcc accaactgct accgcgact gcaactcgatt 720
 ggctcagtcg ctttccagag ctgtgggctc aattgatcta cctgttcgct gggcagtagc 780
 agcacgccgg gatcctcggc gagatcatcg tgaaggcaga ccaggcctca gttgcacagg 840
 agctaggagg caatccggat cgagctctgg ctgcaccgaa gcagtcgctg cagcggcagt 900
 tggcagacgg ccttcgcttc ttgggtgaagg acaagttcaa gttgaatcaa cctagcggcc 960
 cgtctgatgg atggctgacc caggacgcac tctggctggg gagcaagcct gctgccgatc 1020
 aactgagagc ctacctgctg gccagggtta tcgatgggtt gccctcctc aacgcgccgt 1080
 tcttcagcat gtcacaggac caagccgtca tccagacaaa tgccgaggac aaggccattt 1140
 ggacggccac ggtgctggat ggagaaacaa gttcacgcta ctcaagattg 1200
 ctccagcctt gatctggaca gatgctgcc agcgcctc accctacagc ggatcactgg 1260
 tcgttgaaga tggaaccgcc tcaacggaaa agccggaaa gacctgtgaa attcccaacg 1320
 ggccggctga acagcagcaa gcaccagaaa cgaagatgat gctccatcaa cctgcgccga 1380
 gcgttgcgaa accggcaaac gagacgcagg cgattgcgaa accctcaact gatgatcaag 1440
 aagaaacaga cgatttgtat gcacttcttg gtaatatcaa ttgcgacct gaagagctag 1500
 aactagcca cgactcgccg gctgcctctc ctacgaacac acgcggggag gagaacctac 1560

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agcagccact agggaccaag gagccaacag attgcgctcc tgaagcaatt gaagatgtat 1620
ttatgcctag cagaagtact gatctgggac agggattcgt tggttggatg aaatctggca 1680
tcgcggccccg tcgcctgttc atcaacgaca ccaaggcttt ggtgcatacc gtagacggga 1740
ccgccatgct ggtcacgcca ggaattttca agcgctatgt ccaagagcat ccggtgcttg 1800
aaaaactggc ccaagccaag gagacgaccg gctggaagct ggtgcagcgc gcgttcgaaa 1860
aacaggggct tcatcggaag accagtaaaa acctgaacat ctggaccatc aaggtttctg 1920
gtcctcgcaa gacgaaagag ctcaaggcct acctgctcca ggatcccaaa ttgctgttcc 1980
ctgagcagcc tctggacaac ccaagcctca cggtcatcac cgatgccgaa ggaggtgtgg 2040
aatgacgccg cagcagctca ccgaggagta catcttcgcg cacgatctcc gggaagccag 2100
c 2101

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<210> 103
 <211> 641
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 103

Met	Asn	Arg	His	Gly	Ala	Ser	His	Val	Ser	Thr	Pro	Phe	Leu	Asp	Ile	1	5	10	15
Gln	Glu	Ala	Val	Pro	His	Pro	Asn	Asn	Gln	Ser	Cys	Pro	Arg	Gly	Ile	20	25	30	
His	Pro	Ser	Ser	Glu	Gln	His	Gly	Thr	Ala	Arg	His	Ala	Ser	Pro	Pro	35	40	45	
Ala	Ala	Thr	Gly	Glu	His	Leu	Ala	Ala	Arg	Leu	Ala	Ile	Gln	Ala	Ala	50	55	60	
Ile	Arg	Gly	Asp	Leu	Pro	Ala	Ala	Thr	Gly	Gln	Leu	Cys	Gly	Val	Gly	65	70	75	80
Pro	Ala	Pro	Cys	Phe	Gly	Lys	Ser	Ser	Pro	Cys	Pro	Ser	Arg	Arg	Asp	85	90	95	
Asp	Arg	Ser	Arg	Pro	Gly	Asp	Arg	Gly	Tyr	Ala	Leu	Lys	Val	Arg	Gln	100	105	110	
Thr	Tyr	Leu	Leu	Pro	Ile	Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln	115	120	125	
Ala	Glu	Ala	Trp	Ser	Ala	Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp	130	135	140	
Ile	Gly	Lys	Ile	Val	Val	Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser	145	150	155	160
Thr	Trp	His	Pro	Trp	Asn	Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys	165	170	175	
Tyr	Val	Lys	Ser	Arg	Glu	Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu	180	185	190	
Phe	Ile	His	Gln	Leu	Leu	Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg	195	200	205	
Phe	Pro	Glu	Leu	Trp	Ala	Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr	210	215	220	
Glu	His	Ala	Gly	Ile	Leu	Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala	225	230	235	240
Ser	Val	Ala	Gln	Glu	Leu	Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala	245	250	255	
Pro	Lys	Gln	Ser	Leu	Gln	Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu	260	265	270	
Val	Lys	Asp	Lys	Phe	Lys	Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly	275	280	285	
Trp	Leu	Thr	Gln	Asp	Ala	Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp	290	295	300	
Gln	Leu	Arg	Ala	Tyr	Leu	Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser	305	310	315	320
Ser	Asn	Ala	Pro	Phe	Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln		325	330	335	

Thr	Asn	Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly
			340					345					350		
Ala	Gly	Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu
		355					360					365			
Ile	Trp	Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu
	370					375					380				
Val	Val	Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys
385					390					395					400
Glu	Ile	Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys
			405					410						415	
Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
		420						425					430		
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
		435					440					445			
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
	450					455					460				
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
465				470					475						480
Glu	Glu	Asn	Leu	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	
			485				490						495		
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
		500					505						510		
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
	515					520						525			
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
	530				535						540				
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
545				550					555						560
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp
			565				570							575	
Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr
		580					585						590		
Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys
	595					600					605				
Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe
	610				615					620					
Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala
625				630					635						640
Glu															

<210> 104
 <211> 4590
 <212> DNA
 <213> *Pseudomonas aeruginosa*

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 <212> DNA
 <213> Pseudomonas aeruginosa

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 <212> DNA
 <213> Pseudomonas aeruginosa

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1020
1035

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<211> 427
<212> PRT
<213> *Pseudomonas aeruginosa*

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35 40 45
Ser Trp Arg Trp Pro Ile Arg Ala Ile Asp Ser Trp Ala Cys Asn Ser
50 55 60
Ile Pro Ser Arg Phe Ser Pro Pro Thr Ala Ser Val Cys Trp Arg Thr
65 70 75 80
Leu Tyr Ser Gly Ala Ala Arg Trp Arg Ser Arg Ser Ala Phe Gly Pro
85 90 95
Glu Arg Arg Cys Ala Val Ser Thr Glu Ala Arg Leu Pro Gly Arg Arg
100 105 110
Ile Val Glu Thr Leu Ala Ala Gln Phe Ala Gln Ala Leu Ala Gly Ala
115 120 125
Phe Glu Lys Ala Thr Glu Ala Ala Leu Gly Phe Gln Arg Gly Val Val
130 135 140
Val Ala Ile His Leu Gly Val Asp Ala Ala Arg Phe Val Gln Phe Ala
145 150 155 160
Glu Asp Cys Gln Gly Thr Val Ala Gln Ala Phe Leu Asp Glu Ile Met
165 170 175
Arg Arg Asp Ala Pro Ser Asp Ala Gly Phe His Gln Thr Gln His Val
180 185 190
Val Glu Val Phe His Glu Glu Tyr Leu Val Ala Asp Arg Pro Gln Gln
195 200 205
Val Arg Met Leu Pro Gly Ala Ala Thr Glu Ala Asp Leu Pro Val Ile
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Gly Gln Ala Arg Asp Ala Val Gln Gly Gly Ile Ala Gln Arg Val Leu
225 230 235 240
Arg Met Gly Asp Asp Glu Arg Leu Gly Val Ala Glu His Ala Leu Val
245 250 255
Glu Ala Gly Asp Leu Gln Phe Leu Val Asp Gly Asp Gly Asp Ile Asp
260 265 270
Phe Arg Val Val Leu Leu Asp Arg Gln Ala Ile Gly Gly Arg Gly
275 280 285
Ala Tyr Gln Ala Asp His Val Glu Ile Val Glu Gln Tyr Ala Ala His
290 295 300
Arg Ile Ala Glu Arg Arg Arg Asp Gly Gly Val Gln Gln His Pro Glu
305 310 315 320
Ile Ala Arg Thr Leu Val Glu Ile Glu Gly Asp Val Ala Asp Gln Leu
325 330 335
Leu Val Val Gln Gln Ala Ala His Val Arg Asp Gln Ala Lys Arg Leu
340 345 350
Leu Gly Gly Phe Asp Leu Val Ala Val Pro Thr Asp Gln Leu His Ala
355 360 365
Gln Val Asp Phe Gln Val Ala Asp Arg Arg Ala Asp Arg Gly Val Arg
370 375 380
Leu Ala Gln Asp Pro Arg Ser Gly Gly Asn Arg Thr Gly Gly Asp Asp
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<210> 108
<211> 344
<212> PRT
<213> Pseudomonas aeruginosa

<400> 108
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35 40 45
Glu Leu Val Arg Arg Asp Gly Tyr Lys Val Glu Pro Thr Glu Gln Ala
50 55 60
Leu Arg Leu Ile Pro Tyr Met Arg Ser Leu Leu Asn Tyr Gln Gln Leu
65 70 75 80
Ile Gly Asp Ile Ala Phe Asn Leu Asn Lys Gly Pro Arg Asn Leu Arg
85 90 95
Val Leu Leu Asp Thr Ala Ile Pro Pro Ser Phe Cys Asp Thr Val Ser
100 105 110
Ser Val Leu Leu Asp Asp Phe Asn Met Val Ser Leu Ile Arg Thr Ser
115 120 125
Pro Ala Asp Ser Leu Ala Thr Ile Lys Gln Asp Asn Ala Glu Ile Asp
130 135 140
Ile Ala Ile Thr Ile Asp Glu Glu Leu Lys Ile Ser Arg Phe Asn Gln
145 150 155 160
Cys Val Leu Gly Tyr Thr Lys Ala Phe Val Val Ala His Pro Gln His
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Pro Leu Cys Asn Ala Ser Leu His Ser Ile Ala Ser Leu Ala Asn Tyr
180 185 190
Arg Gln Ile Ser Leu Gly Ser Arg Ser Gly Gln His Ser Asn Leu Leu
195 200 205
Arg Pro Val Ser Asp Lys Val Leu Phe Val Glu Asn Phe Asp Asp Met
210 215 220
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225 230 235 240
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245 250 255
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260 265 270
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275 280 285
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<210> 109

<211> 128
 <212> DNA
 <213> Pseudomonas aeruginosa

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<210> 110
 <211> 42
 <212> PRT
 <213> Pseudomonas aeruginosa

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 <212> DNA
 <213> Pseudomonas aeruginosa

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<210> 115

<211> 1266

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 115

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<210> 116
 <211> 437
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 116

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His	Gly	Met	Ala	Gly	Glx	Arg	Leu	Arg	Arg	Leu	Leu	Glu	Arg	Ser	Phe
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Pro	Pro	Ala	Gly	Phe	Pro	Arg	Cys	Pro	Phe	Arg	His	Cys	Ala	Val	Leu
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Leu	Leu	Ser	Gly	Thr	Leu	Val	Gln	Leu	Ser	Gly	Arg	Leu	Ala	Asn	Arg
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Pro	Lys	Asn	Arg	Thr	Glu	Ser	Met	Pro	His	Thr	Cys	Asn	Phe	Glx	Gly
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Val	Met	Ala	Ile	Ala	Lys	Lys	Arg	Leu	Glx	Val	Cys	Pro	Leu	Ser	Asn
			100					105					110		
Leu	Val	Thr	Thr	Gly	Phe	Gln	Ala	Lys	His	Ser	Val	Met	Ala	Ile	Arg
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Glu	Lys	Val	Ser	Arg	Gln	Phe	Phe	Arg	Pro	Val	Ile	Pro	Met	Ser	Ser
145					150					155				160	
Phe	Gln	Tyr	Gly	Cys	Gln	Ser	Ile	Arg	Thr	Gly	Gly	Asp	Ser	His	His
			165						170					175	
Ala	Arg	Val	Pro	Thr	Val	Glu	Arg	Phe	Thr	Asp	Asn	Leu	Glu	Leu	Arg
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Arg	Arg	Asn	Arg	Ala	Thr	Val	Glu	His	Tyr	Met	Arg	Met	Lys	Gly	Ala
		195					200					205			
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Asn	Trp	Thr	Thr	Glu	Ser	Gly	Glu	Pro	Leu	Val	Phe	Arg	Gly	His	Glu
225					230					235				240	
Ser	Leu	Arg	Arg	Leu	Ala	Glu	Trp	Leu	Glu	Arg	Cys	Phe	Pro	Asp	Trp
				245					250					255	
Glu	Trp	His	Asn	Val	Arg	Ile	Phe	Glu	Thr	Glu	Asp	Pro	Asn	His	Leu
			260					265					270		
Trp	Val	Glu	Cys	Asp	Gly	Arg	Gly	Lys	Ala	Leu	Val	Pro	Gly	Tyr	Pro
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305					310					315				320	
Arg	Ala	Leu	Gly	Ile	Ala	Val	Pro	Gln	Ile	Lys	Arg	Asp	Gly	Ile	Pro
			325						330					335	
Thr	Glx	Leu	Met	Ile	Ile	Pro	Ile	Gln	Glu	Glu	Ile	Glx	Arg	Cys	Ser
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	355						360					365			
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385	390	395
Gly Pro Pro Ile Pro Ala Arg Pro Ser Ser Phe Val Ala Arg Thr Ser		400
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Trp Pro Ser Thr Arg Cys Gly Arg Glx Asn Ala Phe Pro Asp Trp Glu		415
	420	425
Trp Tyr Asn Ile Lys		430
435		

<210> 117
 <211> 88
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 117
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35 40 45
Gly Leu Trp Thr Thr Asp Thr Gly Ser Pro Ile Val Ile Arg Gly Lys
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Asp Lys Leu Ala Glu His Ala Val Trp Ser Leu Lys Cys Leu Pro Gly
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Leu Gly Val Val Gln His Gln Gly
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<210> 118
 <211> 216
 <212> DNA
 <213> Pseudomonas aeruginosa

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gagctgctgc ggcgccaccc gttgctccag caggggctcg cctggcttgg cgtcggctgg	180
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<210> 119
 <211> 103
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 119	
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<210> 120
 <211> 147
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 120	
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tgatcgctg gatgaacagg tcgacaa 147

<210> 121
<211> 140
<212> DNA
<213> Pseudomonas aeruginosa

<220>
<221> variation
<222> (1)...(140)
<223> N is any nucleic acid.

<400> 121
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ctacgcgtgg acaacgtggc 140

<210> 122
<211> 304
<212> DNA
<213> Pseudomonas aeruginosa

<220>
<221> variation
<222> (1)...(304)
<223> N is any nucleic acid.

<400> 122
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cctt 304

<210> 123
<211> 45
<212> DNA
<213> Pseudomonas aeruginosa

<400> 123
tcgttggtaca ggccgaacag gccgagctgc cagggtgtcgc cctcgc 45

<210> 124
<211> 406
<212> DNA
<213> Pseudomonas aeruginosa

<400> 124
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<210> 125
<211> 200

<212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 125
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 gggcggtgggc accactgccca 200

<210> 126
 <211> 117
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 126
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<210> 127
 <211> 325
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 127
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 ttcattgcttc atagtctggc cggcc 325

<210> 128
 <211> 360
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<220>
 <221> variation
 <222> (1)...(360)
 <223> N is any nucleic acid.

<400> 128
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 tcaccaccag gctgcggtcc cctccctgcc agcggaaata acgacggaag ctggcgctcg 180
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 cgggcaaaca agagtccaac cagcaattca gctgctggaa acgggcatca tcagacattt 300
 acgggggttct ccacggccct agccgttgcg caggtcatgc tttattatcc agcatctttt 360

<210> 129
 <211> 3065
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 129
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 ttgctctggc gccagtcctat gggcgagtc ctcgacgaac tgagcgagga gctgcaccgc 180

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<210> 130

<211> 530

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 130

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Leu Glu Ala Glu Glu Thr Arg Asn Lys Ala Leu Ala Val Leu Thr Ala
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 515 520 525
 Val Gly
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<210> 131
 <211> 1436
 <212> DNA
 <213> *Pseudomonas aeruginosa*

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<210> 132
 <211> 460
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 132
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 35 40 45
 Lys Leu Pro Asp Arg Ala Met Ala Arg Gly Gln Leu Ser Ile Pro Asp
 50 55 60
 Leu Glu Gly Leu Pro Pro Met Phe Arg Asp Phe Leu Glu Arg Thr Ile
 65 70 75 80
 Pro Gln Val Pro Arg Asn Pro Arg Gly Gln Gln Arg Glu Ala Gln Ser
 85 90 95
 Leu Gly Ser Gly Phe Ile Ile Ser Asn Asp Gly Tyr Ile Leu Thr Asn
 100 105 110

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Arg	Ser	Glu	His	Lys	Ala	Lys	Leu	Val	Gly	Ala	Asp	Pro	Arg	Ser	Asp
	130					135					140				
Val	Ala	Val	Leu	Lys	Ile	Glu	Ala	Lys	Asn	Leu	Pro	Thr	Leu	Lys	Leu
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Gly	Asp	Ser	Asn	Lys	Leu	Lys	Val	Gly	Glu	Trp	Val	Leu	Ala	Ile	Gly
			165						170					175	
Ser	Pro	Phe	Gly	Phe	Asp	His	Ser	Val	Thr	Ala	Gly	Ile	Val	Ser	Ala
		180						185					190		
Lys	Gly	Arg	Ser	Leu	Pro	Asn	Glu	Ser	Tyr	Val	Pro	Phe	Ile	Gln	Thr
	195					200					205				
Asp	Val	Ala	Ile	Asn	Pro	Gly	Asn	Ser	Gly	Gly	Pro	Leu	Leu	Asn	Leu
	210					215					220				
Glu	Gly	Glu	Val	Val	Gly	Ile	Asn	Ser	Gln	Ile	Phe	Thr	Arg	Ser	Gly
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Gly	Phe	Met	Gly	Leu	Ser	Phe	Ala	Ile	Pro	Ile	Asp	Val	Ala	Leu	Asn
			245						250					255	
Val	Ala	Asp	Gln	Leu	Lys	Lys	Ala	Gly	Lys	Val	Ser	Arg	Gly	Trp	Leu
		260						265					270		
Gly	Val	Val	Ile	Gln	Glu	Val	Asn	Lys	Asp	Leu	Ala	Glu	Ser	Phe	Gly
	275						280					285			
Leu	Asp	Lys	Pro	Ser	Gly	Ala	Leu	Val	Ala	Gln	Leu	Val	Glu	Asp	Gly
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Pro	Ala	Ala	Lys	Gly	Gly	Leu	Gln	Val	Gly	Asp	Val	Ile	Leu	Ser	Leu
305				310						315					320
Asn	Gly	Gln	Ser	Ile	Asn	Glu	Ser	Ala	Asp	Leu	Pro	His	Leu	Val	Gly
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		340						345					350		
Gln	Arg	Lys	Ser	Leu	Ser	Met	Ala	Val	Gly	Asn	Leu	Pro	Asp	Asp	Asp
	355						360					365			
Glu	Glu	Ile	Ala	Ser	Met	Gly	Ala	Pro	Gly	Ala	Glu	Arg	Ser	Ser	Asn
	370					375					380				
Arg	Leu	Gly	Val	Thr	Val	Ala	Asp	Leu	Thr	Ala	Glu	Gln	Arg	Lys	Ser
385					390					395					400
Leu	Asp	Ile	Gln	Gly	Gly	Val	Val	Ile	Lys	Glu	Val	Gln	Asp	Gly	Pro
			405						410					415	
Ala	Ala	Val	Ile	Gly	Leu	Arg	Pro	Gly	Asp	Val	Ile	Thr	His	Leu	Asp
		420						425				430			
Asn	Lys	Ala	Val	Thr	Ser	Thr	Lys	Ile	Phe	Ala	Asp	Val	Ala	Lys	Ala
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<210> 133
 <211> 1341
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 133	
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gagaagtccg aacgccacac cgtggtggtg cgcagcaccg tactgccggg caccgtcaac	420

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<210> 134
 <211> 436
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 134

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Ser	Gly	Thr	Thr	Asp	Phe	Lys	Lys	Ala	Val	Leu	Asp	Ser	Asp	Val	Ser
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Phe	Ile	Cys	Val	Gly	Thr	Pro	Ser	Lys	Lys	Asn	Gly	Asp	Leu	Asp	Leu
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		100						105					110		
Lys	Ser	Glu	Arg	His	Thr	Val	Val	Val	Arg	Ser	Thr	Val	Leu	Pro	Gly
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Thr	Val	Asn	Asn	Val	Val	Ile	Pro	Leu	Ile	Glu	Asp	Cys	Ser	Gly	Lys
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Lys	Ala	Gly	Val	Asp	Phe	Gly	Val	Gly	Thr	Asn	Pro	Glu	Phe	Leu	Arg
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Glu	Ser	Thr	Ala	Ile	Lys	Asp	Tyr	Asp	Phe	Pro	Pro	Met	Thr	Val	Ile
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Gly	Glu	Leu	Asp	Lys	Gln	Thr	Gly	Asp	Leu	Leu	Glu	Glu	Ile	Tyr	Arg
		180					185						190		
Glu	Leu	Asp	Ala	Pro	Ile	Ile	Arg	Lys	Thr	Val	Glu	Val	Ala	Glu	Met
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Val	Met	Asp	Val	Ile	Cys	Gln	Asp	His	Lys	Leu	Asn	Leu	Ser	Arg	Tyr
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	260						265					270			
Val	Arg	Ala	Leu	Thr	Tyr	Arg	Ala	Ser	Gln	Leu	Asp	Val	Glu	His	Pro
	275					280						285			

Met	Leu	Gly	Ser	Leu	Met	Arg	Ser	Asn	Ser	Asn	Gln	Val	Gln	Lys	Ala
290						295					300				
Phe	Asp	Leu	Ile	Thr	Ser	His	Asp	Thr	Arg	Lys	Val	Gly	Leu	Leu	Gly
305					310					315					320
Leu	Ser	Phe	Lys	Ala	Gly	Thr	Asp	Asp	Leu	Arg	Glu	Ser	Pro	Leu	Val
				325					330					335	
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				340				345					350		
Asp	Arg	Asn	Val	Glu	Tyr	Ala	Arg	Val	His	Gly	Ala	Asn	Lys	Glu	Tyr
		355					360					365			
Ile	Glu	Ser	Lys	Ile	Pro	His	Val	Ser	Ser	Leu	Leu	Val	Ser	Asp	Leu
370						375					380				
Asp	Glu	Val	Val	Ala	Ser	Ser	Asp	Val	Leu	Val	Leu	Gly	Asn	Gly	Asp
385					390					395					400
Glu	Leu	Phe	Val	Asp	Leu	Val	Asn	Lys	Thr	Pro	Ser	Gly	Lys	Lys	Leu
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Val	Asp	Leu	Val	Gly	Phe	Met	Pro	His	Thr	Thr	Thr	Ala	Gln	Ala	Glu
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Gly	Ile	Cys	Trp												
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<210> 135
 <211> 1723
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 135																
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gttttgaaaag	cccagtgaaa	taaactctgg	aaaaggcagt	tataagggtc	ataaaaggga											1680
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<210> 136

<211> 2048
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 136
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 attcgggtgat gccgcgcata acgtattccg agtcgggtgat cagacggatc ggacaggaac 420
 gcttgagtgc cgccagcgcc tggatcgccg ccatacagctc catgcggttg ttggtggtgt 480
 ccggctcgcc gccccaagc tctcgctcgg cggccttgta gaggagcaac gccccccagc 540
 cgccgcgccc aggggttgccc ttgcaggcgc cgtcggtata gatcactacc tgttctttat 600
 ctgtcatgcc taaatttcgg aatctcgccg gctgactttc gccaccggca tgggcaccag 660
 ctgaccgcgc ggttcgcgct tgctctggcg caacggggcg aacccacga ccagcttgcg 720
 tgccaccaat agatagaagc cggcgcccgga agactgccag gcgtcgcccc agcgtctccag 780
 gcgagccagg cgcgattgcc aggtcgccga cgcaagcggc ggacgatagc acccgaagcg 840
 ccgtttctcc agcgcgaagc ccagcaggtt gagccaatcg cagggcccgc acggaggaat 900
 gcagcggggc tggcgcaagg catccccggc gaaataatga cggatgcccc acaggctcca 960
 tgggttgatg ccgatcagca gcaggtggcc gcccggaaga acgggtacgc cggtctcgcg 1020
 caggagacgg tttaggcgaca ggcagaaatc caggccgtgt tgcagcagga ccacgtccgc 1080
 ggcatgttcg ctgagcggcc aggcgccttc ttcgcaggcg atgtccacgc ccggcagcgg 1140
 cggccccagg cgacgcgcgc gctgaatctg ccgggtgctc ggccggcagtt cggcatgcgg 1200
 cccgtagtgc accaggtagc caccgaagta acgggtcagc tcgtcgacaca acaggcgctc 1260
 ctctcggcc agcatcaggc tgcccagcgg gccctggaac cagtcgcgcg cccggttgat 1320
 cgatgccagc cactcggcat cggctctggg gaaggcttgc gggttcgttca tgcgtacctc 1380
 cagcgtcttc cccttcgcgg cgacggacgc cggcacgacg ggaaaataag caatactatg 1440
 cgccaatgac ttctgcttag cgacatcgac ccatagataa gatcgacgcc ctgcccgcct 1500
 tcaacgacaa ctacatctgg ctgttgcaag atgcgacaag ccgtcgctgc gcggtggtcg 1560
 accccggcga tgccaagccg gtggaagcct ggctggccgc ccatcccga tggcggttga 1620
 gcgatatcct ggtgaccac caccatcacg accacgtcgg cggcgtcgcg gccctgaagg 1680
 aactgaccgg cgcgcgggtt ctcgcccg ccaacgagaa gatcccggcc cgcgacctgg 1740
 cgctggaaga cggcgaacgg gtcgaggtgc tcggcctggt cttcgagatc ttccacgtgc 1800
 ccggccatac cctcgcccat atgcctact accaccggc ggagacgccg ctgctgttct 1860
 gcggcgacac cctgttcgcc gccggctgcg gccgtctctt cgaaggcacc ccggcgacga 1920
 tgcaccattc ctgggcgca ctggccgcgc tgccggccaa caccggggtc tactgcaccc 1980
 acgagtacac gctgagcaac ctgcgcttcg cgctggcggg ggagcccga aacgcggcgc 2040
 tgcgggaa 2048

<210> 137
 <211> 144
 <212> DNA
 <213> Pseudomonas aeruginosa

<220>
 <221> variation
 <222> (1)...(144)
 <223> N is any nucleic acid.

<400> 137
 nttgtgttaa gatcaggctt ggtggtgaag aaagggttcga acnngtgggtc aatgatcnac 60
 ttcggggatn cngctgcccg tatnattcaa cacgtggtca aacgggtatgt tccgaggcgt 120
 ctgnccacn gtactagtcg acgc 144

<210> 138
 <211> 18
 <212> DNA

<213> Pseudomonas aeruginosa
 <400> 138
 aatatcgccc tgagcagc 18
 <210> 139
 <211> 20
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 139
 aatacactca ctatgcgctg 20
 <210> 140
 <211> 18
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 140
 ccatctcatc agagggta 18
 <210> 141
 <211> 20
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 141
 cgttaccatg ttaggaggtc 20
 <210> 142
 <211> 24
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 142
 cgcacgctcg aaacgctggc ggcc 24
 <210> 143
 <211> 24
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 143
 gccgatggcg agatcatggc gatg 24
 <210> 144
 <211> 29
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 144
 tgcgcaacga tacgccgttg ccgacgatc 29
 <210> 145
 <211> 24
 <212> DNA
 <213> Pseudomonas aeruginosa
 <400> 145

gattccacct tcgcagcgca gccc 24

<210> 146
<211> 24
<212> DNA
<213> Pseudomonas aeruginosa

<400> 146
gattccacct tcgcagcgca gccc 24

<210> 147
<211> 24
<212> DNA
<213> Pseudomonas aeruginosa

<400> 147
gccgatggcg agatcatggc gatg 24

<210> 148
<211> 1008
<212> DNA
<213> Pseudomonas aeruginosa

<400> 148
ggccaggcaa acgcgatggc caccgtgcaa cagctcgacc cgatctacgt cgacgtcacc 60
cagccgtcca ccgccctgtt gcgcatgcgc cgcgaactgg ccagcggcca gttggagcgc 120
gccggcgaca acgctgcgaa ggtctccctg aagctggagg acggtagcca ataccgctg 180
gaaggccgcc tcgaattctc cgaggtttcc gtcgacgaag gcaccggctc ggtcaccatc 240
cgcgcctgtt tccccaaccc gaacaacgag ctgctgcccg gcatgttcgt tcacgcgcag 300
ttgcaggaag gcgtcaagca gaaggccatc ctgcgtccgc agcaaggcgt gaccgcgcac 360
ctcaagggcc aggtaccgc gctggtggtg aacgcgcaga acaaggctga gctgcgggtg 420
atcaaggccg accgggtgat cggcgacaag tggctggtca ccgaaggcct gaacgccggc 480
gacaagatca ttaccgaagg cctgcagttc gtgcagccgg gtgtcgaggt gaagaccgtg 540
ccggcgaaaga atgtcgcgtc cgcgcagaag gccgacgccg ctccggcgaa aaccgacagc 600
aagggctgat caaggggatt cgtaatgtcg aagtttttca ttgataggcc cattttcgcg 660
tgggtgatcg ccttggtgat catgctcgcg ggccggcctgt cgatcctcaa tctgccggtc 720
aaccagtacc cggccatcgc cccgccggcc atcgccgtgc aggtgagcta cccggggccc 780
tcggccgaga cgggtgcagga caccgtggtc caggtgatcg agcagcagat gaacgggatc 840
gacaatctgc gctacatctc ctccggagagt aactccgacg gcagcatgac catcaccgtg 900
accttcgaac agggcaccga ccccacatc gccaggtcc aggtgcagaa caagctgcaa 960
ctggccaccc cgctgctgcc gcaggaagtg cagcgccagg ggatccgg 1008

<210> 149
<211> 202
<212> PRT
<213> Pseudomonas aeruginosa

<400> 149
Gly Gln Ala Asn Ala Met Ala Thr Val Gln Gln Leu Asp Pro Ile Tyr
1 5 10 15
Val Asp Val Thr Gln Pro Ser Thr Ala Leu Leu Arg Met Arg Arg Glu
20 25 30
Leu Ala Ser Gly Gln Leu Glu Arg Ala Gly Asp Asn Ala Ala Lys Val
35 40 45
Ser Leu Lys Leu Glu Asp Gly Ser Gln Tyr Pro Leu Glu Gly Arg Leu
50 55 60
Glu Phe Ser Glu Val Ser Val Asp Glu Gly Thr Gly Ser Val Thr Ile
65 70 75 80
Arg Ala Val Phe Pro Asn Pro Asn Asn Glu Leu Leu Pro Gly Met Phe

<400> 152

Arg	Arg	Pro	Ala	Gly	Leu	Asn	Arg	Arg	Ser	Leu	Arg	Pro	Ser	Gln	Ala
1				5					10					15	
Gly	Arg	Ala	Val	Ala	Arg	Phe	Ile	Arg	Pro	Ile	Thr	Ala	Ser	Pro	Thr
			20					25					30		
Arg	Pro	Pro	Cys	Lys	Ser	Asn	Ser	Pro	Ile	Pro	Ala	Ala	Ser	Ala	Pro
		35					40					45			
Ala	Trp	Ile	Ala	Pro	Ser	Arg	Ser	Ser	Thr	Val	Pro	Ser	Met	Ser	Ser
	50					55					60				
Ala	Arg	Arg	Ser	Thr	Cys	Val	Thr	Arg	Trp	Cys	Thr	Thr	Ser	Ser	Ser
65					70				75					80	
Trp	Thr	Thr	Cys	Ala	Ser	Ala	Ala	Pro	Ser	Ser	Ser	Arg	Asn	Ser	Ile
			85					90					95		
Arg	Cys	Arg	Thr	Thr	Ser	Ser	Ser	Ser	Ser	Ala	Pro	Thr	Ala	Phe	Pro
			100					105					110		
Arg	Arg	Ser	Ala	Arg	Lys	Pro	Arg	Gly	Ala	Ala					
		115					120								

<210> 153

<211> 762

<212> DNA

<213> Pseudomonas aeruginosa

<400> 153

atgaacgaac	cgcaagcctt	cgcccagacc	gatgccgagt	ggctggcatc	gatcaaccgg	60
gcgcgcgact	ggttccaggg	cccgtcgggc	agcctgatgc	tggccgagga	gcgacgcctg	120
ttgtgcgacg	agctgaccgg	ttacttcggt	ggctacctgg	tgcactacgg	gccgcatgcc	180
gaactgccgc	cgagcaccgg	gcagattcag	cgcggcgtgc	gcctggggcc	gccgctgccg	240
ggcgtggaca	tcgcctgcga	agagggcgcc	tggccgctca	gcgaacatgc	cgcggacgtg	300
gtcctgctgc	aacacggcct	ggatttctgc	ctgtcgcctc	accgtctcct	gcgcgaagcc	360
gcgcgtaccg	ttcgtccggg	cggccacctg	ctgctgatcg	gcatcaacct	atggagcctg	420
tggggcatcc	gtcattatct	cgccggggat	gccttgccgc	aggcccgtcg	cattcctccg	480
tcgcgggcct	gcgattggct	caacctgctg	ggcttcgcgc	tggagaaacg	gcgcttcggg	540
tgctatcgtc	cgcgcgttgc	gtcggcagcc	tggcaatcgc	gcctggctcg	cctggagcgc	600
tggggcgacg	cctggcagtc	ttcggggcgc	ggcttctatc	tattggtggc	acgcaagctg	660
gtcgtggggg	tgcgcccgtt	gcgccagagc	aagcgcgaac	cgcgcggtca	gctgggtgcc	720
atgccggtgg	cgaaagtcag	ccggcgagat	tccgaaatct	ag		762

<210> 154

<211> 801

<212> DNA

<213> Pseudomonas aeruginosa

<400> 154

atggagcctg	tggggcatcc	gtcattatct	cgccggggat	gccttgccgc	aggcccgtcg	60
cattcctccg	tcgcgggcct	gcgattggct	caacctgctg	ggcttcgcgc	tggagaaacg	120
gcgcttcggg	tgctatcgtc	cgccgcttgc	gtcggcagcc	tggcaatcgc	gcctggctcg	180
cctggagcgc	tggggcgacg	cctggcagtc	ttcggggcgc	ggcttctatc	tattggtggc	240
acgcaagctg	gtcgtggggg	tgcgcccgtt	gcgccagagc	aagcgcgaac	cgcgcggtca	300
gctgggtgcc	atgccggtgg	cgaaagtcag	ccggcgagat	tccgaaatct	aggcatgaca	360
gataaagaac	aggtagtgat	ctataccgac	ggcgcctgca	agggcaacct	tgggcgcggc	420
ggctgggggg	cgttgctcct	ctacaagggc	gccgagcgag	agctttgggg	cggcgagccg	480
gacaccacca	acaaccgcat	ggagctgatg	gcggcgatcc	aggcgctggc	ggcactcaag	540
cgttctctgt	cgatccgtct	gatcaccgac	tcggaatacg	tgatgcgcgc	catcaccgaa	600
tggttgccga	actggaagaa	gcgcggctgg	aagaccgcca	gcaagcagcc	tgtcaagaat	660
gccgacctct	ggcaggccct	ggatgaacag	gtcgcgccgc	accaggtgga	gtggcagtg	720
gtccgcgggc	ataccggcga	ccccggcaac	gagcggggcc	accagttggc	caaccgtggc	780
gtcgcggaat	tgccgcgctg	a				801

<210> 155
 <211> 513
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 155
 atgacggatg cccacaggc tccatgggtt gatgccgatc agcagcaggt ggccgcccgg 60
 acgaacggta cgcgcggctt cgcgcaggag acggtgaggc gacaggcaga aatccaggcc 120
 gtgttgcagc aggaccacgt ccgcggcatg ttcgctgagc ggccaggcgc cctcttcgca 180
 ggcgatgtcc acgcccggca gcggcggccc caggcgcacg ccgcgctgaa tctgcccggg 240
 gctcggcggc agttcggcat gcggcccgtg gtgcaccagg tagccaccga agtaacgggt 300
 cagctcgtcg cacaacaggc gtcgctcctc ggccagcatc aggctgcccc gcgggcccctg 360
 gaaccagtcg cgcgcccggg tgatcgatgc cagccactcg gcatcggtct gggcgaaggc 420
 ttgcggttcg ttcatgcgta cctccagcgt cttccccttc gcggcgacgg acgccggcac 480
 gacgggaaaa taagcaatac tatgcgccaa tga 513

<210> 156
 <211> 253
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 156
 Met Asn Glu Pro Gln Ala Phe Ala Gln Thr Asp Ala Glu Trp Leu Ala
 1 5 10 15
 Ser Ile Asn Arg Ala Arg Asp Trp Phe Gln Gly Pro Leu Gly Ser Leu
 20 25 30
 Met Leu Ala Glu Glu Arg Arg Leu Leu Cys Asp Glu Leu Thr Arg Tyr
 35 40 45
 Phe Gly Gly Tyr Leu Val His Tyr Gly Pro His Ala Glu Leu Pro Pro
 50 55 60
 Ser Thr Gly Gln Ile Gln Arg Gly Val Arg Leu Gly Pro Pro Leu Pro
 65 70 75 80
 Gly Val Asp Ile Ala Cys Glu Glu Gly Ala Trp Pro Leu Ser Glu His
 85 90 95
 Ala Ala Asp Val Val Leu Leu Gln His Gly Leu Asp Phe Cys Leu Ser
 100 105 110
 Pro His Arg Leu Leu Arg Glu Ala Ala Arg Thr Val Arg Pro Gly Gly
 115 120 125
 His Leu Leu Leu Ile Gly Ile Asn Pro Trp Ser Leu Trp Gly Ile Arg
 130 135 140
 His Tyr Phe Ala Gly Asp Ala Leu Arg Gln Ala Arg Cys Ile Pro Pro
 145 150 155 160
 Ser Arg Ala Cys Asp Trp Leu Asn Leu Leu Gly Phe Ala Leu Glu Lys
 165 170 175
 Arg Arg Phe Gly Cys Tyr Arg Pro Pro Leu Ala Ser Ala Ala Trp Gln
 180 185 190
 Ser Arg Leu Ala Arg Leu Glu Arg Trp Gly Asp Ala Trp Gln Ser Ser
 195 200 205
 Gly Ala Gly Phe Tyr Leu Leu Val Ala Arg Lys Leu Val Val Gly Leu
 210 215 220
 Arg Pro Leu Arg Gln Ser Lys Arg Glu Pro Arg Gly Gln Leu Val Pro
 225 230 235 240
 Met Pro Val Ala Lys Val Ser Arg Arg Asp Ser Glu Ile
 245 250

<210> 157
 <211> 266
 <212> PRT

<213> Pseudomonas aeruginosa

<400> 157

Met	Glu	Pro	Val	Gly	His	Pro	Ser	Leu	Phe	Arg	Arg	Gly	Cys	Leu	Ala
1				5					10					15	
Pro	Gly	Pro	Leu	His	Ser	Ser	Val	Ala	Gly	Leu	Arg	Leu	Ala	Gln	Pro
			20					25					30		
Ala	Gly	Leu	Arg	Ala	Gly	Glu	Thr	Ala	Leu	Arg	Val	Leu	Ser	Ser	Ala
		35					40					45			
Ala	Cys	Val	Gly	Ser	Leu	Ala	Ile	Ala	Pro	Gly	Ser	Pro	Gly	Ala	Leu
	50					55					60				
Gly	Arg	Arg	Leu	Ala	Val	Phe	Gly	Arg	Arg	Leu	Ser	Ile	Gly	Gly	
65					70					75				80	
Thr	Gln	Ala	Gly	Arg	Gly	Val	Ala	Pro	Val	Ala	Pro	Glu	Gln	Ala	Arg
				85					90					95	
Thr	Ala	Arg	Ser	Ala	Gly	Ala	His	Ala	Gly	Gly	Glu	Ser	Gln	Pro	Ala
			100					105					110		
Arg	Phe	Arg	Asn	Leu	Gly	Met	Thr	Asp	Lys	Glu	Gln	Val	Val	Ile	Tyr
		115					120					125			
Thr	Asp	Gly	Ala	Cys	Lys	Gly	Asn	Pro	Gly	Arg	Gly	Gly	Trp	Gly	Ala
	130					135					140				
Leu	Leu	Leu	Tyr	Lys	Gly	Ala	Glu	Arg	Glu	Leu	Trp	Gly	Gly	Glu	Pro
145					150					155					160
Asp	Thr	Thr	Asn	Asn	Arg	Met	Glu	Leu	Met	Ala	Ala	Ile	Gln	Ala	Leu
				165					170					175	
Ala	Ala	Leu	Lys	Arg	Ser	Cys	Pro	Ile	Arg	Leu	Ile	Thr	Asp	Ser	Glu
			180					185					190		
Tyr	Val	Met	Arg	Gly	Ile	Thr	Glu	Trp	Leu	Pro	Asn	Trp	Lys	Lys	Arg
		195					200					205			
Gly	Trp	Lys	Thr	Ala	Ser	Lys	Gln	Pro	Val	Lys	Asn	Ala	Asp	Leu	Trp
	210					215					220				
Gln	Ala	Leu	Asp	Glu	Gln	Val	Ala	Arg	His	Gln	Val	Glu	Trp	Gln	Trp
225					230					235					240
Val	Arg	Gly	His	Thr	Gly	Asp	Pro	Gly	Asn	Glu	Arg	Ala	Asp	Gln	Leu
				245					250					255	
Ala	Asn	Arg	Gly	Val	Ala	Glu	Leu	Pro	Arg						
			260					265							

<210> 158

<211> 170

<212> PRT

<213> Pseudomonas aeruginosa

<400> 158

Met	Thr	Asp	Ala	Pro	Gln	Ala	Pro	Trp	Val	Asp	Ala	Asp	Gln	Gln	Gln
1				5					10					15	
Val	Ala	Ala	Arg	Thr	Asn	Gly	Thr	Arg	Gly	Phe	Ala	Gln	Glu	Thr	Val
			20					25					30		
Arg	Arg	Gln	Ala	Glu	Ile	Gln	Ala	Val	Leu	Gln	Gln	Asp	His	Val	Arg
		35					40					45			
Gly	Met	Phe	Ala	Glu	Arg	Pro	Gly	Ala	Leu	Phe	Ala	Gly	Asp	Val	His
	50					55					60				
Ala	Arg	Gln	Arg	Arg	Pro	Gln	Ala	His	Ala	Ala	Leu	Asn	Leu	Pro	Gly
65					70					75					80
Ala	Arg	Arg	Gln	Phe	Gly	Met	Arg	Pro	Val	Val	His	Gln	Val	Ala	Thr
				85					90					95	
Glu	Val	Thr	Gly	Gln	Leu	Val	Ala	Gln	Gln	Ala	Ser	Leu	Leu	Gly	Gln
			100					105					110		

His Gln Ala Ala Gln Arg Ala Leu Glu Pro Val Ala Arg Pro Val Asp
115 120 125
Arg Cys Gln Pro Leu Gly Ile Gly Leu Gly Glu Gly Leu Arg Phe Val
130 135 140
His Ala Tyr Leu Gln Arg Leu Pro Leu Arg Gly Asp Gly Arg Arg His
145 150 155 160
Asp Gly Lys Ile Ser Asn Thr Met Arg Gln
165 170

<210> 159
<211> 759
<212> DNA
<213> Pseudomonas aeruginosa

<400> 159
atgcgggcgag atgccccatc cgacgccggc ttccaccaga cgcagcatgt cgtcgaagtt 60
ttccacgaag agcaccttgt cgctgaccgg ccgcagcagg ttccgaatgct gcccggagcg 120
gctgccgagg ctgatctgcc ggtaattggc caggctcgcg atgctgtgca gggaggcatt 180
gcacaacggg tgctgcggat gggcgacgac gaacgccttg gtgtagccga gcacgcactg 240
gttgaagcgg gagatcttca gttcctcgtc gatggtgatg gcgatatcga tttccgcgtt 300
gtcctgcttg atcgtcgcca ggctatcggc gggcgagggtg cgtatcaggc tgaccatggt 360
gaaatcgctg agcagtacgc tgctcaccgt atcgcagaac gacggcggga tggcgggtgtc 420
cagcagcacc cggagattgc gcggaccctt gttgagattg aaggcgatgt cgccgatcag 480
ctgctggttag ttcagcaggc tgcgcatgta agggatcagg cgaagcgcct gctcgggtggg 540
ttcgaccttg tagccgtccc gacggaccag ctccacgcac aggtcgattt ccaggttgct 600
gaccgccgag ctgaccgcgg tgtgcgactt gcgcaggatc cgcgcagcgg aggaaatcga 660
accggaggcg atgacctgga ggaacatggt cacgtgattc aggttatgaa taggcatccc 720
ttattccttt tattgggtgg cgcgtgccgc ttcccttga 759

<210> 160
<211> 1299
<212> DNA
<213> Pseudomonas aeruginosa

<400> 160
tatggatgcc agtcgattcg aactggcgga gattcgcacc atgcgagagt accaaccggtt 60
gaaaggggtt accgacaacc tgggaattgag gcggcgcaac cgtgccacgg tcgagcacta 120
catgcgcatg aagggggcgg aacgggtgca gcggcacagc ctgttcgctg aggacggctg 180
cgccggcaac tggaccacgg aaagcggcga acccctggtt ttccggggcc atgagagcct 240
caggcgggtc gccgagtggc tcgagcgctg cttccccgac tgggagtggc acaacgtgctg 300
gatcttcgag accgaggatc cgaaccacct ctgggtcgag tgcgacgggc gcggcaaggc 360
gctggtcccc gggtatccgc agggctattg cgagaaccac tacatccatt ctttcgaact 420
cgagaacggc cggataaaac gcaatcgca gttcacgaac ccgatgcaga aattgcgtgc 480
attgggaata gccgttccgc aaataaaacg tgacggcatt cccacctgat taatgattat 540
tccaattcaa gaggagatat gacgatgctc gataatgcta ttccccaagg tttcgaagac 600
gccgtggagt tgcgcaggaa gaatcgcgag acggtggtca agtatatgaa caccaaaggc 660
caggatcgcc tgcgcgccca tgaacttttc gtcgaggacg gctgtggcgg tttatggacc 720
accgataccg gctcgcccat cgtcattcgt ggcaaggaca agctggccga gcacgcgggtg 780
tggtcgctga aatgcttccc ggattgggag tgggtacaaca tcaaggctct cgagaccgac 840
gatcccaacc acttctgggt cgagtgcgac ggccacggca agatcctctt ccccggttat 900
cccggagggt actacgagaa ccacttctcg cattccttcg agctggacga cggcaagatc 960
aagcgcaacc gcgaattcat gaacgtcttc cagcaattgc gcgccctgag cattccggctc 1020
ccgcagatca aacgcgaagg cattcccacc tgaggccatc ctggaagggg tgaactatgg 1080
acgatctatt gcaacgcgta cggcgctgag aagcgctgca gcaaccgaa tggggcgatc 1140
cgtcgcgcct gcgcgacgtg caggcgtaacc tgcgcggcag tccggcgctg atccgcgcgg 1200
gcgacatcct ggccctgcgc gcgaccctgg ccgggtcgcc cgcggcgagg cgctggtggt 1260
cgagtgcggc gactgcgccg aggacatgga cgaccacca 1299

<210> 161
 <211> 162
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 161
 Met Arg Glu Tyr Gln Arg Leu Lys Gly Phe Thr Asp Asn Leu Glu Leu
 1 5 10 15
 Arg Arg Arg Asn Arg Ala Thr Val Glu His Tyr Met Arg Met Lys Gly
 20 25 30
 Ala Glu Arg Leu Gln Arg His Ser Leu Phe Val Glu Asp Gly Cys Ala
 35 40 45
 Gly Asn Trp Thr Thr Glu Ser Gly Glu Pro Leu Val Phe Arg Gly His
 50 55 60
 Glu Ser Leu Arg Arg Leu Ala Glu Trp Leu Glu Arg Cys Phe Pro Asp
 65 70 75 80
 Trp Glu Trp His Asn Val Arg Ile Phe Glu Thr Glu Asp Pro Asn His
 85 90 95
 Leu Trp Val Glu Cys Asp Gly Arg Gly Lys Ala Leu Val Pro Gly Tyr
 100 105 110
 Pro Gln Gly Tyr Cys Glu Asn His Tyr Ile His Ser Phe Glu Leu Glu
 115 120 125
 Asn Gly Arg Ile Lys Arg Asn Arg Glu Phe Thr Asn Pro Met Gln Lys
 130 135 140
 Leu Arg Ala Leu Gly Ile Ala Val Pro Gln Ile Lys Arg Asp Gly Ile
 145 150 155 160
 Pro Thr

<210> 162
 <211> 162
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 162
 Met Leu Asp Asn Ala Ile Pro Gln Gly Phe Glu Asp Ala Val Glu Leu
 1 5 10 15
 Arg Arg Lys Asn Arg Glu Thr Val Val Lys Tyr Met Asn Thr Lys Gly
 20 25 30
 Gln Asp Arg Leu Arg Arg His Glu Leu Phe Val Glu Asp Gly Cys Gly
 35 40 45
 Gly Leu Trp Thr Thr Asp Thr Gly Ser Pro Ile Val Ile Arg Gly Lys
 50 55 60
 Asp Lys Leu Ala Glu His Ala Val Trp Ser Leu Lys Cys Phe Pro Asp
 65 70 75 80
 Trp Glu Trp Tyr Asn Ile Lys Val Phe Glu Thr Asp Asp Pro Asn His
 85 90 95
 Phe Trp Val Glu Cys Asp Gly His Gly Lys Ile Leu Phe Pro Gly Tyr
 100 105 110
 Pro Glu Gly Tyr Tyr Glu Asn His Phe Leu His Ser Phe Glu Leu Asp
 115 120 125
 Asp Gly Lys Ile Lys Arg Asn Arg Glu Phe Met Asn Val Phe Gln Gln
 130 135 140
 Leu Arg Ala Leu Ser Ile Pro Val Pro Gln Ile Lys Arg Glu Gly Ile
 145 150 155 160
 Pro Thr

<210> 163
 <211> 74
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 163
 Met Asp Asp Leu Leu Gln Arg Val Arg Arg Cys Glu Ala Leu Gln Gln
 1 5 10 15
 Pro Glu Trp Gly Asp Pro Ser Arg Leu Arg Asp Val Gln Ala Tyr Leu
 20 25 30
 Arg Gly Ser Pro Ala Leu Ile Arg Ala Gly Asp Ile Leu Ala Leu Arg
 35 40 45
 Ala Thr Leu Ala Gly Ser Pro Ala Ala Arg Arg Trp Trp Cys Ser Ala
 50 55 60
 Ala Thr Ala Pro Arg Thr Trp Thr Thr Thr
 65 70

<210> 164
 <211> 1161
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 164
 cgctcgacgag gcccgccatg ggccaaggtt tgttgctcggg aggcgctccc gacgacgatg 60
 gagcgtgcga gaagaacaat gagaaagacc gccgtgaggg ccatcggaga gccgttctac 120
 ggtttccgca aagatccggg gcgccgtccc ctccagcaca gcgcagttcc tgcgcggcgc 180
 ctcggtgccc tgctcatcga gaagttctct tcagcctcgt ttcgtcgtcg cccggcgggc 240
 ggccaatggg ctcgacctcg tccggaacac ccgcacaggg ccggtggcga tatgtacttc 300
 caggtccggc ttgataaagg gaattgtcat gagtggataa gacggaaaaca aaaaagaata 360
 aaaacgctga agaaccgaat cctgccggga tcgattgttg actggtgaag ctggcatgca 420
 tgatgagaga gagggatatc tcgagatttt gtcaagaata acaaccgagg aagagtctct 480
 ctccctgggt ctcgagatat gcggttaatta tggattcgaa ttcttttcat tcggtgcgcg 540
 ggcgcttttc ccgctgaccg cgcctaaata tcatttcctg tccaattacc cagggggaatg 600
 gaaaagcaga tatatctccg aagactacac atccatcgac ccgatcgtgc gccatggtct 660
 cctggaatac accccgctga tctggaatgg cgaagacttc caggagaacc gtttcttctg 720
 ggaggaagcg ctgcatcacg gcatccgtca cggctggtcg atcccgggtc gcggcaagta 780
 cgggctgatac agcatgctgt ccctgggtgcg ttccagcgag agcatcgccg ctacggaaat 840
 cctggagaag gaatccttcc tgctctggat caccagcatg ctgcaggcta ccttcggcga 900
 cctgctggcg ccgcgcatcg tcccggaaaag caatgtgcgc ctgaccgcca gggaaaccga 960
 gatgctcaag tggaccgcgg tgggcaagac ctacggcgag atcggcctga tcctgtcgat 1020
 cgaccagcgc acggtgaaat tccatatcgt caatgcgatg cgcaagctca actccagcaa 1080
 caaggcggag gccaccatga aggcctacgc catcggcctg ctcaactgaa tcgacgcctc 1140
 gtcgcctagc gaggccgccg c 1161

<210> 165
 <211> 238
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 165
 Met His Asp Glu Arg Glu Gly Tyr Leu Glu Ile Leu Ser Arg Ile Thr
 1 5 10 15
 Thr Glu Glu Glu Phe Phe Ser Leu Val Leu Glu Ile Cys Gly Asn Tyr
 20 25 30
 Gly Phe Glu Phe Phe Ser Phe Gly Ala Arg Ala Pro Phe Pro Leu Thr
 35 40 45
 Ala Pro Lys Tyr His Phe Leu Ser Asn Tyr Pro Gly Glu Trp Lys Ser
 50 55 60

Arg	Tyr	Ile	Ser	Glu	Asp	Tyr	Thr	Ser	Ile	Asp	Pro	Ile	Val	Arg	His
65					70					75					80
Gly	Leu	Leu	Glu	Tyr	Thr	Pro	Leu	Ile	Trp	Asn	Gly	Glu	Asp	Phe	Gln
				85					90					95	
Glu	Asn	Arg	Phe	Phe	Trp	Glu	Glu	Ala	Leu	His	His	Gly	Ile	Arg	His
			100					105					110		
Gly	Trp	Ser	Ile	Pro	Val	Arg	Gly	Lys	Tyr	Gly	Leu	Ile	Ser	Met	Leu
	115						120					125			
Ser	Leu	Val	Arg	Ser	Ser	Glu	Ser	Ile	Ala	Ala	Thr	Glu	Ile	Leu	Glu
	130					135					140				
Lys	Glu	Ser	Phe	Leu	Leu	Trp	Ile	Thr	Ser	Met	Leu	Gln	Ala	Thr	Phe
145					150					155					160
Gly	Asp	Leu	Leu	Ala	Pro	Arg	Ile	Val	Pro	Glu	Ser	Asn	Val	Arg	Leu
			165						170					175	
Thr	Ala	Arg	Glu	Thr	Glu	Met	Leu	Lys	Trp	Thr	Ala	Val	Gly	Lys	Thr
	180							185					190		
Tyr	Gly	Glu	Ile	Gly	Leu	Ile	Leu	Ser	Ile	Asp	Gln	Arg	Thr	Val	Lys
	195						200					205			
Phe	His	Ile	Val	Asn	Ala	Met	Arg	Lys	Leu	Asn	Ser	Ser	Asn	Lys	Ala
	210					215					220				
Glu	Ala	Thr	Met	Lys	Ala	Tyr	Ala	Ile	Gly	Leu	Leu	Asn	Glx		
225					230					235					

<210> 166
 <211> 633
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 166	
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caggccgacg actataccgc cggcaaggaa tacgtcgagc tgagcagccc ggtgccggtg	120
tcccagccgg gcaagatcga agtgggtggaa ctgttctggt atggctgccc gcattgctac	180
gcgttcgagc cgaccatcgt gccgtggagc gagaagctgc cggcagatgt ccatttcgtg	240
cgctgcctg ccctgttcgg cggtatctgg aacgtccatg ggcagatgtt cctgaccctg	300
gaaagcatgg gtgtcgagca tgacgtccac aacgccgtgt tcgaggcgat ccacaaggag	360
cacaagaagc tcgccactcc ggaagagatg gccgatttcc tcgccggcaa gggcgtggac	420
aaggaaaaat tcctgagcac ctataattcc tttgccatca agggccagat ggaaaaggcc	480
aagaagctgg cgatggccta ccaggtcacc ggcgtaccga ccatggtggt caatggcaaa	540
taccgcttcg acatcggctc cgccggtggt ccggaggaaa ccctcaagct ggccgactac	600
ctgatcgaga aagagcgcg cgccaagaag tag	633

<210> 167
 <211> 210
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 167	
Met Arg Asn Leu Ile Leu Thr Ala Met Leu Ala Met Ala Ser Leu Phe	
1 5 10 15	
Gly Met Ala Ala Gln Ala Asp Asp Tyr Thr Ala Gly Lys Glu Tyr Val	
20 25 30	
Glu Leu Ser Ser Pro Val Pro Val Ser Gln Pro Gly Lys Ile Glu Val	
35 40 45	
Val Glu Leu Phe Trp Tyr Gly Cys Pro His Cys Tyr Ala Phe Glu Pro	
50 55 60	
Thr Ile Val Pro Trp Ser Glu Lys Leu Pro Ala Asp Val His Phe Val	
65 70 75 80	
Arg Leu Pro Ala Leu Phe Gly Gly Ile Trp Asn Val His Gly Gln Met	


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ggccaccgca  tgcgcgtctg  ggtcaacacc  ggccctgctcg  ccgatgtcgc  ccgcgcccag  2100
gagcgtggcg  ccgagggcgt  gggcctgtac  cgcaccgaag  tgccgttcat  gatcaacgac  2160
cgcttcccca  gcgagaagga  acagctggcg  atctaccgcg  agcagctcag  tgccttccac  2220
ccgctgccgg  tgaccatgcg  caccctggat  atcggcggcg  acaaggcgct  gtcctacttc  2280
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gacctgctcg  gccagttgct  caccttcgac  aaccgcgagg  tcattccacag  ctgctgcac  2940
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tgattttccc  3010

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<210> 169
 <211> 159
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 169
Met Ile Asp Ser Asp Gly Phe Arg Pro Asn Val Gly Ile Ile Leu Ala
 1             5             10             15
Asn Glu Ala Gly Gln Val Leu Trp Ala Arg Arg Ile Asn Gln Glu Ala
 20            25            30
Trp Gln Phe Pro Gln Gly Gly Ile Asn Asp Arg Glu Thr Pro Glu Glu
 35            40            45
Ala Leu Tyr Arg Glu Leu Asn Glu Glu Val Gly Leu Glu Ala Gly Asp
 50            55            60
Val Arg Ile Leu Ala Cys Thr Arg Gly Trp Leu Arg Tyr Arg Leu Pro
 65            70            75            80
Gln Arg Leu Val Arg Thr His Ser Gln Pro Leu Cys Ile Gly Gln Lys
 85            90            95
Gln Lys Trp Phe Leu Leu Arg Leu Met Ser Asp Glu Ala Arg Val Arg
100           105           110
Met Asp Ile Thr Ser Lys Pro Glu Phe Asp Gly Trp Arg Trp Val Ser
115           120           125
Tyr Trp Tyr Pro Leu Gly Gln Val Val Thr Phe Lys Arg Glu Val Tyr
130           135           140
Arg Arg Ala Leu Lys Glu Leu Ala Pro Arg Leu Leu Ala Arg Asp
145           150           155

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<210> 170
 <211> 759
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 170
Met Leu Asn Thr Leu Arg Lys Ile Val Gln Glu Val Asn Ser Ala Lys
 1             5             10             15
Asp Leu Lys Ala Ala Leu Gly Ile Ile Val Gln Arg Val Lys Glu Ala
 20            25            30
Met Gly Thr Gln Val Cys Ser Val Tyr Leu Leu Asp Thr Glu Thr Gln
 35            40            45
Arg Phe Val Leu Met Ala Thr Glu Gly Leu Asn Lys Arg Ser Ile Gly

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50		55		60
Lys Val Ser Met Ala Pro Ser Glu Gly Leu Val Gly Leu Val Gly Thr				
65	70		75	80
Arg Glu Glu Pro Leu Asn Leu Glu Asn Ala Ala His Pro Arg Tyr				
	85	90		95
Arg Tyr Phe Ala Glu Thr Gly Glu Glu Arg Tyr Ala Ser Phe Leu Gly				
	100	105		110
Ala Pro Ile Ile His His Arg Arg Val Met Gly Val Leu Val Val Gln				
	115	120		125
Gln Lys Glu Arg Arg Gln Phe Asp Glu Gly Glu Glu Ala Phe Leu Val				
	130	135		140
Thr Met Ser Ala Gln Leu Ala Gly Val Ile Ala His Ala Glu Ala Thr				
	145	150		155
Gly Ser Ile Arg Gly Leu Gly Lys Leu Gly Lys Gly Ile Gln Glu Ala				
	165	170		175
Lys Phe Val Gly Val Pro Gly Ala Pro Gly Val Gly Val Gly Lys Ala				
	180	185		190
Val Val Val Leu Pro Pro Ala Asp Leu Glu Val Val Pro Asp Lys Gln				
	195	200		205
Val Asp Asp Ile Asp Ala Glu Ile Ala Leu Phe Lys Gln Ala Leu Glu				
	210	215		220
Gly Val Arg Ala Asp Met Arg Ala Leu Ser Ser Lys Leu Ala Ser Gln				
	225	230		235
Leu Arg Lys Glu Glu Arg Ala Leu Phe Asp Val Tyr Leu Met Met Leu				
	245	250		255
Asp Asp Ala Ser Ile Gly Asn Glu Val Lys Arg Ile Ile Arg Thr Gly				
	260	265		270
Gln Trp Ala Gln Gly Ala Leu Arg Gln Val Val Met Glu His Val Gln				
	275	280		285
Arg Phe Glu Leu Met Asp Asp Ala Tyr Leu Arg Glu Arg Ala Ser Asp				
	290	295		300
Val Lys Asp Ile Gly Arg Arg Leu Leu Ala Tyr Leu Gln Glu Glu Arg				
	305	310		315
Lys Gln Asn Leu Thr Tyr Pro Glu Gln Thr Ile Ile Val Ser Glu Glu				
	325	330		335
Leu Ser Pro Ala Met Leu Gly Glu Val Pro Glu Gly Arg Leu Val Gly				
	340	345		350
Leu Val Ser Val Leu Gly Ser Gly Asn Ser His Val Ala Ile Leu Ala				
	355	360		365
Arg Ala Met Gly Ile Pro Thr Val Met Gly Ala Val Asp Leu Pro Tyr				
	370	375		380
Ser Lys Val Asp Gly Ile Asp Leu Ile Val Asp Gly Tyr His Gly Glu				
	385	390		395
Val Tyr Thr Asn Pro Ser Ala Glu Leu Val Arg Gln Tyr Ser Asp Val				
	405	410		415
Val Ala Glu Glu Arg Glu Leu Ser Lys Gly Leu Ala Ala Leu Arg Glu				
	420	425		430
Leu Pro Cys Glu Thr Leu Asp Gly His Arg Met Pro Leu Trp Val Asn				
	435	440		445
Thr Gly Leu Leu Ala Asp Val Ala Arg Ala Gln Glu Arg Gly Ala Glu				
	450	455		460
Gly Val Gly Leu Tyr Arg Thr Glu Val Pro Phe Met Ile Asn Asp Arg				
	465	470		475
Phe Pro Ser Glu Lys Glu Gln Leu Ala Ile Tyr Arg Glu Gln Leu Ser				
	485	490		495
Ala Phe His Pro Leu Pro Val Thr Met Arg Thr Leu Asp Ile Gly Gly				
	500	505		510
Asp Lys Ala Leu Ser Tyr Phe Pro Ile Lys Glu Asp Asn Pro Phe Leu				
	515	520		525

Gly	Trp	Arg	Gly	Ile	Arg	Val	Thr	Leu	Asp	His	Pro	Glu	Ile	Phe	Leu
530						535					540				
Val	Gln	Thr	Arg	Ala	Met	Leu	Lys	Ala	Ser	Glu	Gly	Leu	Asp	Asn	Leu
545					550					555					560
Arg	Ile	Leu	Leu	Pro	Met	Ile	Ser	Gly	Thr	His	Glu	Leu	Glu	Glu	Ala
				565					570						575
Leu	His	Leu	Ile	His	Arg	Ala	Trp	Gly	Glu	Val	Arg	Asp	Glu	Gly	Val
			580					585					590		
Asp	Ile	Ala	Met	Pro	Pro	Ile	Gly	Met	Met	Val	Glu	Ile	Pro	Ala	Ala
		595					600					605			
Val	Tyr	Gln	Thr	Arg	Glu	Leu	Ala	Arg	Gln	Val	Asp	Phe	Leu	Ser	Val
610						615					620				
Gly	Ser	Asn	Asp	Leu	Thr	Gln	Tyr	Leu	Leu	Ala	Val	Asp	Arg	Asn	Asn
625					630					635					640
Pro	Arg	Val	Ala	Asp	Leu	Tyr	Asp	Tyr	Leu	His	Pro	Ala	Val	Leu	His
				645					650						655
Ala	Leu	Lys	Lys	Val	Val	Asp	Asp	Ala	His	Leu	Glu	Gly	Lys	Pro	Val
			660					665					670		
Ser	Ile	Cys	Gly	Glu	Met	Ala	Gly	Asp	Pro	Ala	Ala	Ala	Val	Leu	Leu
		675					680					685			
Met	Ala	Met	Gly	Phe	Asp	Ser	Leu	Ser	Met	Asn	Ala	Thr	Asn	Leu	Pro
690						695					700				
Lys	Val	Lys	Trp	Leu	Leu	Arg	Gln	Ile	Thr	Leu	Asp	Lys	Ala	Arg	Asp
705					710					715					720
Leu	Leu	Gly	Gln	Leu	Leu	Thr	Phe	Asp	Asn	Pro	Gln	Val	Ile	His	Ser
				725					730					735	
Ser	Leu	His	Leu	Ala	Leu	Arg	Asn	Leu	Gly	Leu	Gly	Arg	Val	Ile	Asn
			740					745					750		
Pro	Ala	Ala	Thr	Val	Gln	Pro									
			755												

<210> 171
 <211> 1512
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 171

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gggagctcg	ctggtgatgc	cgatggcgcg	cggcctggcg	acgatcacgc	cgacctcggc	180
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gaccagggcc	gccagcagcc	cgcgacgcga	gccgggtccat	tggatgtgca	tgggtgtccc	300
tcgattcgtg	aactcgcgag	cttgcccggg	aaggggcacc	gcaactcacg	agcggcgcgga	360
cagtagcata	taatcaatca	tgagtgacta	attaattggc	gtttctgtaa	catatcctta	420
tgatctgcgg	cgcctttccc	ttgtgaggac	gttcagtggc	caggaaaacc	aaagaggaat	480
cccagaaaac	ccgcgatggc	atactcgatg	ccgccgagcg	ggttttcctg	gaaaagggcg	540
tgggcaccac	tgccatggcc	gacctggcgg	acgccgcggg	ggtttctcgc	ggtgcggtct	600
acggccacta	caagaacaag	atcgaggtct	gtctggcgat	gtgcgaccgc	gccttcggcc	660
agatcgaggt	acccgatgaa	aacgccaggg	tgccggcgct	ggacatcctc	ctgcgcgccg	720
gcatgggctt	tctccgccag	tgctgcgaac	ccggttcggt	gcagcgggtg	ctggagatcc	780
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aactgccggc	gcggctggac	gtcgagctgg	ccagcatcta	tctgcaatcg	ctgtgggacg	960
gcatctgcgg	caccctggcc	tggaaccgagc	gcttgcgcga	cgatccctgg	agccgcgccg	1020
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ccaccagccg	ctgggcgtcc	tcctcgctga	tgtgcaggcg	cttgccatcg	atgtagagca	1200
ccgacaggcg	cgcctcggcg	tcggtaccga	tgcgacggct	gtcgaccggc	gcgcgatgcc	1260

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ggctgccttc gatctccacg ctgcagatgc cttgttccga atcgatttcg atggacatgg 1320
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acggtagctt cacgccagcg tcacgcgcct gccaccgcgc ttggctgcaa tcgtccgcag 1440
agaaggcgag gccagcggag gacgacgcca tgcggctatg cgtgattggt gcgggctatg 1500
tgggactggt ga 1512

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<210> 172

<211> 210

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 172

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Met Ala Arg Lys Thr Lys Glu Glu Ser Gln Lys Thr Arg Asp Gly Ile
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Leu Asp Ala Ala Glu Arg Val Phe Leu Glu Lys Gly Val Gly Thr Thr
          20          25          30
Ala Met Ala Asp Leu Ala Asp Ala Gly Val Ser Arg Gly Ala Val
          35          40          45
Tyr Gly His Tyr Lys Asn Lys Ile Glu Val Cys Leu Ala Met Cys Asp
 50          55          60
Arg Ala Phe Gly Gln Ile Glu Val Pro Asp Glu Asn Ala Arg Val Pro
65          70          75          80
Ala Leu Asp Ile Leu Leu Arg Ala Gly Met Gly Phe Leu Arg Gln Cys
          85          90          95
Cys Glu Pro Gly Ser Val Gln Arg Val Leu Glu Ile Leu Tyr Leu Lys
          100          105          110
Cys Glu Arg Ser Asp Glu Asn Glu Pro Leu Leu Arg Arg Arg Glu Leu
          115          120          125
Leu Glu Lys Gln Gly Gln Arg Phe Gly Arg Arg Gln Ile Arg Arg Ala
          130          135          140
Val Glu Arg Gly Glu Leu Pro Ala Arg Leu Asp Val Glu Leu Ala Ser
145          150          155          160
Ile Tyr Leu Gln Ser Leu Trp Asp Gly Ile Cys Gly Thr Leu Ala Trp
          165          170          175
Thr Glu Arg Leu Arg Asp Asp Pro Trp Ser Arg Ala Glu Arg Met Phe
          180          185          190
Arg Ala Gly Leu Asp Ser Leu Arg Ser Ser Pro Tyr Leu Leu Leu Ala
          195          200          205
Asp Ala
210

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<210> 173

<211> 3119

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 173

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acgtgctgac ccgccgcggc ggtgctgacc gaggtcgcgg tatgcgccgg gcgcggtggc 180
aggttggcat tggcgttctg cagcggggag caatcccagc cgccggtggc cgataccttg 240
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tctgcctgc	ctacgacgaa	gcggtgctgc	gccgcgagct	gcagctgttc	cccactgggt	960
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ggcgtatgat	ctcgcccgcc	gccgtggcga	gcgcatgcgg	ccgaccacc	tgcacacgcc	1560
caagccgctg	atcgaggccg	ccggcgctgc	attgatcgag	cgtcagttgc	tggcgctgcg	1620
ccaggccgga	gtcgacgact	gggtgatcaa	ccatgcctgg	cttggcgagc	agatcgaggc	1680
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gctggaaacc	ggcgggtgaa	tcttccgcgc	cctgccgttg	ctcgccgagc	agccgttctt	1800
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cctggatgcc	ggcggagcgg	tgggagagac	ccgcgaagcg	ggcggcaacc	tgacctacag	1980
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tgctcctgct	ccgccttggg	gtcgcccggt	agagcctgca	tcggtatttg	tacgtaggcc	3060
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<210> 174

<211> 338

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 174

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			20						25				30		
Ala	Glu	Leu		Ile	Pro	Ala	Ser	Ser	Asp	Ala	Ser	Phe	Arg	Arg	Tyr
			35					40					45		
Arg	Trp	Gln	Gly	Gly	Asp	Arg	Ser	Leu	Val	Val	Met	Asp	Ala	Pro	Pro
			50				55					60			
Pro	Gln	Glu	Asp	Cys	Arg	Pro	Phe	Val	Lys	Val	Ala	Gly	Leu	Leu	Ala
						70				75					80
Gly	Ala	Gly	Val	His	Val	Pro	Arg	Ile	Leu	Ala	Gln	Asp	Leu	Glu	Asn

				85				90					95				
Gly	Phe	Leu	Leu	Leu	Ser	Asp	Leu	Gly	Arg	Gln	Thr	Tyr	Leu	Asp	Val		
			100					105					110				
Leu	His	Pro	Gly	Asn	Ala	Asp	Glu	Leu	Phe	Glu	Pro	Ala	Leu	Asp	Ala		
		115					120					125					
Leu	Ile	Ala	Phe	Gln	Lys	Val	Asp	Val	Ala	Gly	Val	Leu	Pro	Ala	Tyr		
	130					135					140						
Asp	Glu	Ala	Val	Leu	Arg	Arg	Glu	Leu	Gln	Leu	Phe	Pro	Asp	Trp	Tyr		
145					150				155						160		
Leu	Ala	Arg	His	Leu	Gly	Val	Glu	Leu	Glu	Gly	Glu	Thr	Leu	Ala	Arg		
			165					170					175				
Trp	Gln	Arg	Ile	Cys	Asp	Leu	Leu	Val	Arg	Ser	Ala	Leu	Glu	Gln	Pro		
	180						185					190					
Arg	Val	Phe	Val	His	Arg	Asp	Tyr	Met	Pro	Arg	Asn	Leu	Met	Leu	Ser		
	195					200					205						
Glu	Pro	Asn	Pro	Gly	Val	Leu	Asp	Phe	Gln	Asp	Ala	Leu	His	Gly	Pro		
	210					215				220							
Val	Thr	Tyr	Asp	Val	Thr	Cys	Leu	Tyr	Lys	Asp	Ala	Phe	Val	Ser	Trp		
225					230				235						240		
Pro	Glu	Pro	Arg	Val	His	Ala	Ala	Leu	Ser	Arg	Tyr	Trp	Lys	Lys	Ala		
				245				250					255				
Thr	Trp	Ala	Gly	Ile	Pro	Leu	Pro	Pro	Ser	Phe	Glu	Asp	Phe	Leu	Arg		
		260					265					270					
Ala	Ser	Asp	Leu	Met	Gly	Val	Gln	Arg	His	Leu	Lys	Val	Ile	Gly	Ile		
	275					280						285					
Phe	Ala	Arg	Ile	Cys	His	Arg	Asp	Gly	Lys	Pro	Arg	Tyr	Leu	Gly	Asp		
	290				295					300							
Val	Pro	Arg	Phe	Phe	Arg	Tyr	Leu	Glu	Thr	Ala	Val	Ala	Arg	Arg	Pro		
305					310				315						320		
Glu	Leu	Ala	Glu	Leu	Gly	Glu	Leu	Leu	Ala	Ser	Leu	Pro	Gln	Gly	Ala		
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Glu Ala

<210> 175
 <211> 224
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 175

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		20						25				30					
Leu	Ile	Glu	Arg	Gln	Leu	Leu	Ala	Leu	Arg	Gln	Ala	Gly	Val	Asp	Asp		
	35					40					45						
Trp	Val	Ile	Asn	His	Ala	Trp	Leu	Gly	Glu	Gln	Ile	Glu	Ala	Tyr	Leu		
	50				55						60						
Gly	Asp	Gly	Ser	Arg	Leu	Gly	Gly	Arg	Ile	Ala	Tyr	Ser	Pro	Glu	Gly		
65					70				75					80			
Glu	Pro	Leu	Glu	Thr	Gly	Gly	Gly	Ile	Phe	Arg	Ala	Leu	Pro	Leu	Leu		
				85				90					95				
Gly	Glu	Gln	Pro	Phe	Leu	Leu	Leu	Asn	Gly	Asp	Val	Trp	Ser	Asp	Phe		
	100						105					110					
Asp	Tyr	Ser	Arg	Leu	His	Leu	Ala	Asp	Gly	Asp	Leu	Ala	His	Leu	Val		
	115					120					125						
Leu	Val	Asp	Asn	Pro	Ala	His	His	Pro	Ala	Gly	Asp	Phe	His	Leu	Asp		
	130					135					140						

Ala	Gly	Gly	Arg	Val	Gly	Glu	Thr	Arg	Glu	Ala	Gly	Gly	Asn	Leu	Thr
145					150					155					160
Tyr	Ser	Gly	Ile	Ala	Val	Leu	His	Pro	Ala	Leu	Phe	Glu	Gly	Cys	Gln
				165					170					175	
Pro	Gly	Ala	Phe	Lys	Leu	Ala	Pro	Leu	Leu	Arg	Lys	Ala	Ile	Ala	Ala
			180					185					190		
Gly	Arg	Val	Ser	Gly	Glu	His	Tyr	Arg	Gly	Gln	Trp	Val	Asp	Val	Gly
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	210					215					220				

<210> 176
 <211> 252
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 176

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Ala	Ser	Ile	Pro	Gly	Ala	Leu	Leu	Gly	Gly	Leu	Leu	Gly	Gln	Leu	Leu
			20					25					30		
Asp	Arg	Arg	Leu	Arg	Leu	Glu	Ser	Trp	Arg	Gly	Leu	Leu	Ala	Arg	Leu
	35					40					45				
Arg	Gly	Arg	Ala	Val	Asn	Asp	Glu	Asp	Asp	Leu	Leu	Phe	Gln	Leu	Leu
	50				55					60					
Gly	Tyr	Leu	Ala	Lys	Ser	Gly	Gly	Arg	Val	Glu	Glu	Met	His	Ile	Arg
65				70					75						80
Gln	Ala	Arg	Glu	Glu	Met	Ala	Leu	Arg	Lys	Leu	Asp	Arg	Arg	Ala	Gln
			85					90						95	
Arg	Arg	Ala	Ile	Ala	Ser	Phe	Gly	Lys	Gly	Lys	Ala	Gly	Ile	Ala	His
		100					105						110		
Leu	Gln	Ala	Glu	Val	Ala	Arg	Leu	Lys	Gly	Glu	Arg	Ala	Glu	Ala	Val
	115					120					125				
Leu	Leu	Ala	Cys	Trp	Arg	Met	Ala	Trp	Ala	Gly	Gly	Val	Leu	Ser	Gln
	130				135					140					
Ser	Ala	Arg	Gln	Leu	Val	Leu	Gln	Trp	Gly	Arg	Trp	Leu	Gly	Trp	Ser
145				150					155						160
Ala	Glu	Arg	Thr	Glu	Arg	Leu	Ser	Ala	Arg	Val	Met	Pro	Lys	Arg	Thr
			165					170						175	
Arg	Ala	Val	Ala	Arg	Asp	Ser	Tyr	Arg	Glu	Ala	Leu	Leu	Leu	Leu	Gly
		180						185					190		
Val	Glu	Ala	Gly	Ser	Glu	Pro	Ala	Leu	Ile	Lys	Arg	Ala	Tyr	Arg	Lys
	195					200					205				
Leu	Ile	Ser	Gln	His	His	Pro	Asp	Lys	Leu	Ala	Gly	Ala	Gly	Ala	Ser
	210					215					220				
Val	Glu	Arg	Val	Arg	Ala	Ala	Thr	Glu	Lys	Thr	Arg	Glu	Leu	Gln	Ala
225				230						235					240
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<210> 177
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 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 177
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<210> 178
 <211> 24
 <212> DNA
 <213> *Pseudomonas aeruginosa*

 <400> 178
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 <210> 179
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 <212> DNA
 <213> *Pseudomonas aeruginosa*

 <400> 179
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 <210> 180
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 <212> DNA
 <213> *Pseudomonas aeruginosa*

 <400> 180
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 <210> 181
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 <213> *Pseudomonas aeruginosa*

 <400> 181
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 <210> 182
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 <213> *Pseudomonas aeruginosa*

 <400> 182
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 <210> 183
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 <213> *Pseudomonas aeruginosa*

 <400> 183
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 <210> 184
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 <212> DNA
 <213> *Pseudomonas aeruginosa*

 <400> 184
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 <210> 185
 <211> 24
 <212> DNA

<213> *Pseudomonas aeruginosa*

<400> 185
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<210> 186
 <211> 20
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 186
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<210> 187
 <211> 36
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 187
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<210> 188
 <211> 35
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 188
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<210> 189
 <211> 1932
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 189
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 acgcttcgcc gccggcagct actggagaac atctggcagc gcgcctcgct atccaagcag 180
 caattcgagg agatctaccg gcggccactg gccaaactatg ccgagctggt ccagcagctc 240
 cctgcttcgg aaaaatcatca ccatgcccat ccaggcggga tgatcgatca cggcctggag 300
 atcgtggcct acgcactcaa ggtacggcag acctacctgc tcccgatcgg cgcagcgccg 360
 ggtcacagt cagcccaggc tgaagcctgg tcggccgccg cggcgatagg cgcctggct 420
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gtttctggtc	ctcgcaagac	gaaagagctc	aaggcctacc	tgctccagga	tcccaaattg	1860
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ggtgtggaat	ga					1932

<210> 190

<211> 1920

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 190

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cggcagctac	tggagaacat	ctggcagcgc	gcctcgctat	ccaagcagca	attcgaggag	180
atctaccggc	ggccactggc	caactatgcc	gagctggtcc	agcagctccc	tgcttcggaa	240
aatcatcacc	atgcccattcc	aggcgggatg	atcgatcacg	gcctggagat	cgtggcctac	300
gcactcaagg	tacggcagac	ctacctgctc	ccgatcggcg	cagcgccgga	gtcacagtca	360
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cgcaagacga	aagagctcaa	ggcctacctg	ctccaggatc	ccaaattgct	gttccctgag	1860
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<210> 191

<211> 1827

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 191

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ctggtccagc	agctccctgc	ttcggaataa	catcaccatg	cccatccagg	cgggatgatc	180

gatcacggcc	tggagatcgt	ggcctacgca	ctcaagggtac	ggcagaccta	cctgctcccc	240
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aatgccgagg	acaaggccat	ttggacggcc	acggtagaca	acgggtgctgg	atggagaaac	960
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caggatccca	aattgctgtt	ccctgagcag	cctctggaca	acccaagcct	cacggtcatc	1800
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<210> 192

<211> 1653

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 192

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gcggcgatag	gcgccctggc	tcatgacata	ggcaagatcg	tcgtcgacct	gcaggttgag	180
ctacaggacg	gcagcacctg	gcacccttgg	aacggaccga	tcaaccagcc	ataccgcttc	240
aagtacgtga	agtcgccgca	ataccagctc	cacggcgctg	cctcagcact	tctcatccac	300
caactgctac	cgcgcaactg	actcgattgg	ctcagtcgct	ttccagagct	gtgggctcaa	360
ttgatctacc	tgttcgctgg	gcagtacgag	cacgccggga	tcctcggcga	gatcatcgct	420
aaggcagacc	aggcctcagt	tgcacaggag	ctaggaggca	atccggatcg	agctctggct	480
gcaccgaagc	agtcgctgca	gcggcagttg	gcagacggcc	ttcgcttctt	ggtgaaggac	540
aagttcaagt	tgaatcaacc	tagcggcccc	tctgatggat	ggctgaccca	ggacgcactc	600
tggctggtga	gcaagcctgc	tgccgatcaa	ctgagagcct	acctgctggc	ccagggtatc	660
gatgggggtg	cctcctctaa	cgcgccgttc	ttcagcatgc	tccaggacca	agccgtcatc	720
cagacaaatg	ccgaggacaa	ggccatttgg	acggccacgg	tagacaacgg	tgctggatgg	780
agaaacaagt	tcacgctact	caagattgct	ccagccttga	tctggacaga	tgctgccgag	840
cgccccctac	cctacagcgg	atcactggct	gttgaagatg	gaaccgcctc	aacggaaaag	900
ccggaaaacga	cctgtgaaat	tcccaacggg	ccggctgaac	agcagcaagc	accagaaaacg	960
aagatgatgc	tccatcaacc	tgcgccgagc	gttgcgaaac	cggcaaacga	gacgcaggcg	1020
attcgaaaac	cctcaactga	tgatcaagaa	gaaacagacg	atattgtatgc	acttcttgggt	1080
aatatcaatt	cgccactaga	agagctagac	actagccacg	actcgccggc	tgctctctct	1140
acgaacacac	gcggggagga	gaacctacag	cagccactag	ggaccaagga	gccaacagat	1200
tgcgctcctg	aagcaattga	agatgtatct	atgcctagca	gaagtactga	tctgggacag	1260
ggattcggtg	gttgatgaa	atctggcatc	gcggcccgtc	gcctgttcat	caacgacacc	1320
aaggcttttg	tgcataccgt	agacgggacc	gccatgctgg	tcacgccagg	aattttcaag	1380
cgctatgtcc	aagagcatcc	ggtgcttgaa	aaactggccc	aagccaagga	gacgaccggc	1440

tggaagctgg	tgcagcgcg	gttcgaaaaa	caggggcttc	atcggaagac	cagtaaaaac	1500
ctgaacatct	ggaccatcaa	ggtttctggt	cctcgcaaga	cgaaagagct	caaggcctac	1560
ctgctccagg	atcccaaatt	gctgttccct	gagcagcctc	tggacaaccc	aagcctcacg	1620
gtcatcaccg	atgccgaagg	aggtgtggaa	tga			1653

<210> 193
 <211> 957
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 193

atgctccagg	accaagccgt	catccagaca	aatgccgagg	acaaggccat	ttggacggcc	60
acggtagaca	acggtgctgg	atggagaaac	aagttcacgc	tactcaagat	tgctccagcc	120
ttgatctgga	cagatgctgc	cgagcgcccc	tcaccctaca	gcggatcact	ggtcgttgaa	180
gatggaaccg	cctcaacgga	aaagccggaa	acgacctgtg	aaattcccaa	cgggccggct	240
gaacagcagc	aagcaccaga	aacgaagatg	atgctccatc	aacctgcgcc	gagcgttgcg	300
aaaccggcaa	acgagacgca	ggcgattgcg	aaaccctcaa	ctgatgatca	agaagaaaca	360
gacgatttgt	atgcacttct	tggtaatatc	aattcgccac	tagaagagct	agacactagc	420
cacgactcgc	cggctgcctc	tcctacgaac	acacgcgggg	aggagaacct	acagcagcca	480
ctagggacca	aggagccaac	agattgcgct	cctgaagcaa	ttgaagatgt	atztatgcct	540
agcagaagta	ctgatctggg	acagggattc	gttggttgga	tgaaatctgg	catcgcggcc	600
cgctgcctgt	tcatcaacga	caccaaggct	ttggtgcata	ccgtagacgg	gaccgccatg	660
ctggtcacgc	caggaatttt	caagcgctat	gtccaagagc	atccggtgct	tgaaaaactg	720
gccaagcca	aggagacgac	cggctggaag	ctggtgcagc	gcgcgttcga	aaaacagggg	780
cttcacgga	agaccagtaa	aaacctgaac	atctggacca	tcaaggtttc	tggtcctcgc	840
aagacgaaa	agctcaaggc	ctacctgctc	caggatccca	aattgctgtt	ccctgagcag	900
cctctggaca	acccaagcct	cacggtcatc	accgatgccg	aaggaggtgt	ggaatga	957

<210> 194
 <211> 690
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 194

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gcgaaaccct	caactgatga	tcaagaagaa	acagacgatt	tgtatgcact	tcttggtaat	120
atcaattcgc	cactagaaga	gctagacact	agccacgact	cgccggctgc	ctctcctacg	180
aacacacgcg	gggaggagaa	cctacagcag	ccactaggga	ccaaggagcc	aacagattgc	240
gctcctgaag	caattgaaga	tgtatttatg	cctagcagaa	gtactgatct	gggacagggg	300
ttcggttggt	ggatgaaatc	tggcatcgcg	gcccgtcgcc	tgttcatcaa	cgacaccaag	360
gctttggtgc	ataccgtaga	cgggaccgcc	atgctggtca	cgccaggaat	tttcaagcgc	420
tatgtccaag	agcatccggt	gcttgaaaaa	ctggcccaag	ccaaggagac	gaccggctgg	480
aagctggtgc	agcgcgcgtt	cgaaaaacag	gggcttcatc	ggaagaccag	taaaaacctg	540
aacatctgga	ccatcaaggt	ttctggtcct	cgcaagacga	aagagctcaa	ggcctacctg	600
ctccaggatc	ccaaattgct	gttccttgag	cagcctctgg	acaacccaag	cctcacggtc	660
atcaccgatg	ccgaaggagg	tgtggaatga				690

<210> 195
 <211> 687
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 195

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aaaccctcaa	ctgatgatca	agaagaaaca	gacgatttgt	atgcacttct	tggtaatatc	120
aattcgccac	tagaagagct	agacactagc	cacgactcgc	cggctgcctc	tcctacgaac	180
acacgcgggg	aggagaacct	acagcagcca	ctagggacca	aggagccaac	agattgcgct	240
cctgaagcaa	ttgaagatgt	atztatgcct	agcagaagta	ctgatctggg	acagggattc	300
gttggttgga	tgaatctgg	catcgcggcc	cgctgcctgt	tcatcaacga	caccaaggct	360

ttggtgcata	cgcgtagacgg	gaccgccatg	ctgggtcacgc	caggaatttt	caagcgctat	420
gtccaagagc	atccgggtgct	tgaaaaactg	gcccgaagcca	aggagacgac	cggctggaag	480
ctgggtgcagc	gcgcgtttcga	aaaacagggg	cttcatcgga	agaccagtaa	aaacctgaac	540
atctggacca	tcaaggtttc	tggtcctcgc	aagacgaaag	agctcaaggc	ctacctgctc	600
caggatccca	aattgctggt	ccctgagcag	cctctggaca	acccaagcct	cacgggtcatc	660
accgatgccg	aaggaggtgt	ggaatga				687

<210> 196
 <211> 423
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 196						
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gcgccccgtc	gcctgttcat	caacgacacc	aaggcttttg	tgcataccgt	agacgggacc	120
gccatgctgg	tcacgccagg	aattttcaag	cgctatgtcc	aagagcatcc	ggtgcttgaa	180
aaactggccc	aagccaagga	gacgaccggc	tggaagctgg	tgcagcgcg	gttcgaaaaa	240
caggggcttc	atcggaagac	cagtaaaaaac	ctgaacatct	ggaccatcaa	ggtttctggt	300
cctcgcaaga	cgaagagct	caaggcctac	ctgctccagg	atcccaaatt	gctgttccct	360
gagcagcctc	tggacaaccc	aagcctcacg	gtcatcaccg	atgccgaagg	aggtgtggaa	420
tga						423

<210> 197
 <211> 378
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 197						
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accgtagacg	ggaccgccat	gctgggtcacg	ccaggaattt	tcaagcgcta	tgtccaagag	120
catccgggtgc	ttgaaaaact	ggcccaagcc	aaggagacga	ccggctggaa	gctggtgcag	180
cgcgcgcttcg	aaaaacaggg	gcttcatcgg	aagaccagta	aaaacctgaa	catctggacc	240
atcaaggttt	ctgggtcctcg	caagacgaaa	gagctcaagg	cctacctgct	ccaggatccc	300
aaattgctgt	tccctgagca	gcctctggac	aaccaagcc	tcacgggtcat	caccgatgcc	360
gaaggaggtg	tggaatga					378

<210> 198
 <211> 300
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 198						
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ctggcccaag	ccaaggagac	gaccggctgg	aagctgggtc	agcgcgcggt	cgaaaaacag	120
gggcttcatc	ggaagaccag	taaaaacctg	aacatctgga	ccatcaaggt	ttctgggtcct	180
cgcaagacga	aagagctcaa	ggcctacctg	ctccaggatc	ccaaattgct	gttccctgag	240
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<210> 199
 <211> 643
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 199															
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			20					25						30	

Leu	Ser	Ser	Met	Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu
		35					40					45			
Glu	Asn	Ile	Trp	Gln	Arg	Ala	Ser	Leu	Ser	Lys	Gln	Gln	Phe	Glu	Glu
	50					55					60				
Ile	Tyr	Arg	Arg	Pro	Leu	Ala	Asn	Tyr	Ala	Glu	Leu	Val	Gln	Gln	Leu
	65				70					75					80
Pro	Ala	Ser	Glu	Asn	His	His	His	Ala	His	Pro	Gly	Gly	Met	Ile	Asp
				85					90					95	
His	Gly	Leu	Glu	Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln	Thr	Tyr
		100						105					110		
Leu	Leu	Pro	Ile	Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln	Ala	Glu
		115					120					125			
Ala	Trp	Ser	Ala	Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp	Ile	Gly
	130					135					140				
Lys	Ile	Val	Val	Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser	Thr	Trp
	145				150					155					160
His	Pro	Trp	Asn	Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys	Tyr	Val
			165						170					175	
Lys	Ser	Arg	Glu	Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu	Leu	Ile
			180					185					190		
His	Gln	Leu	Leu	Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg	Phe	Pro
		195					200					205			
Glu	Leu	Trp	Ala	Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr	Glu	His
	210					215					220				
Ala	Gly	Ile	Leu	Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala	Ser	Val
	225				230					235					240
Ala	Gln	Glu	Leu	Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala	Pro	Lys
				245					250					255	
Gln	Ser	Leu	Gln	Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu	Val	Lys
			260					265					270		
Asp	Lys	Phe	Lys	Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly	Trp	Leu
		275					280					285			
Thr	Gln	Asp	Ala	Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp	Gln	Leu
	290					295					300				
Arg	Ala	Tyr	Leu	Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser	Ser	Asn
	305				310					315					320
Ala	Pro	Phe	Phe	Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln	Thr	Asn
				325					330					335	
Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly	Ala	Gly
			340					345					350		
Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu	Ile	Trp
		355					360					365			
Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu	Val	Val
	370					375					380				
Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys	Glu	Ile
	385				390					395					400
Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys	Met	Met
				405					410					415	
Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu	Thr	Gln
			420					425					430		
Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp	Asp	Leu
		435					440					445			
Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu	Asp	Thr
	450					455					460				
Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu
	465				470					475					480
Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro
				485					490					495	
Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly

			500					505					510			
Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	
		515					520					525				
Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	
	530					535					540					
Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	
545					550					555					560	
Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	
			565						570					575		
Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	
		580						585					590			
Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	
		595					600					605				
Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	
	610					615					620					
Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	
625					630					635					640	
Gly	Val	Glu														

<210> 200

<211> 639

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 200

Met	Phe	Gln	Leu	Leu	Ser	Trp	Ile	Ser	Arg	Lys	Pro	Ser	Pro	Thr	Pro	
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		20					25					30				
Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu	Glu	Asn	Ile	Trp	
	35					40					45					
Gln	Arg	Ala	Ser	Leu	Ser	Lys	Gln	Gln	Phe	Glu	Glu	Ile	Tyr	Arg	Arg	
	50				55					60						
Pro	Leu	Ala	Asn	Tyr	Ala	Glu	Leu	Val	Gln	Gln	Leu	Pro	Ala	Ser	Glu	
65				70					75						80	
Asn	His	His	His	Ala	His	Pro	Gly	Gly	Met	Ile	Asp	His	Gly	Leu	Glu	
			85					90					95			
Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln	Thr	Tyr	Leu	Leu	Pro	Ile	
		100					105					110				
Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln	Ala	Glu	Ala	Trp	Ser	Ala	
	115					120					125					
Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp	Ile	Gly	Lys	Ile	Val	Val	
	130			135					140							
Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser	Thr	Trp	His	Pro	Trp	Asn	
145				150					155						160	
Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys	Tyr	Val	Lys	Ser	Arg	Glu	
		165				170							175			
Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu	Leu	Ile	His	Gln	Leu	Leu	
		180					185					190				
Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg	Phe	Pro	Glu	Leu	Trp	Ala	
	195					200					205					
Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr	Glu	His	Ala	Gly	Ile	Leu	
	210				215						220					
Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala	Ser	Val	Ala	Gln	Glu	Leu	
225				230					235						240	
Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala	Pro	Lys	Gln	Ser	Leu	Gln	
				245					250					255		

Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu	Val	Lys	Asp	Lys	Phe	Lys
			260					265					270		
Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly	Trp	Leu	Thr	Gln	Asp	Ala
		275					280					285			
Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp	Gln	Leu	Arg	Ala	Tyr	Leu
	290					295					300				
Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser	Ser	Asn	Ala	Pro	Phe	Phe
305					310					315					320
Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln	Thr	Asn	Ala	Glu	Asp	Lys
				325					330					335	
Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly	Ala	Gly	Trp	Arg	Asn	Lys
			340					345					350		
Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu	Ile	Trp	Thr	Asp	Ala	Ala
		355					360					365			
Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu	Val	Val	Glu	Asp	Gly	Thr
	370					375					380				
Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys	Glu	Ile	Pro	Asn	Gly	Pro
385					390					395					400
Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys	Met	Met	Leu	His	Gln	Pro
				405					410					415	
Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu	Thr	Gln	Ala	Ile	Ala	Lys
			420					425					430		
Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp	Asp	Leu	Tyr	Ala	Leu	Leu
		435					440					445			
Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu	Asp	Thr	Ser	His	Asp	Ser
	450					455					460				
Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu	Asn	Leu	Gln	Gln
465					470					475					480
Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro	Glu	Ala	Ile	Glu
				485					490					495	
Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly	Gln	Gly	Phe	Val
			500					505					510		
Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp
		515					520					525			
Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr
		530				535					540				
Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys
545					550					555					560
Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala
				565					570					575	
Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile
			580					585					590		
Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala
		595					600					605			
Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp
	610					615					620				
Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu	
625					630					635					

<210> 201

<211> 608

<212> PRT

<213> Pseudomonas aeruginosa

<400> 201

Met	Glu	Leu	Leu	Gly	Thr	Pro	Arg	Arg	Arg	Gln	Leu	Leu	Glu	Asn	Ile
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Asp Thr Lys Ala Leu Val His Thr Val Asp Gly Thr Ala Met Leu Val
 500 505 510
 Thr Pro Gly Ile Phe Lys Arg Tyr Val Gln Glu His Pro Val Leu Glu
 515 520 525
 Lys Leu Ala Gln Ala Lys Glu Thr Thr Gly Trp Lys Leu Val Gln Arg
 530 535 540
 Ala Phe Glu Lys Gln Gly Leu His Arg Lys Thr Ser Lys Asn Leu Asn
 545 550 555 560
 Ile Trp Thr Ile Lys Val Ser Gly Pro Arg Lys Thr Lys Glu Leu Lys
 565 570 575
 Ala Tyr Leu Leu Gln Asp Pro Lys Leu Leu Phe Pro Glu Gln Pro Leu
 580 585 590
 Asp Asn Pro Ser Leu Thr Val Ile Thr Asp Ala Glu Gly Gly Val Glu
 595 600 605

<210> 202
 <211> 550
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 202
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 Gln Thr Tyr Leu Leu Pro Ile Gly Ala Ala Pro Glu Ser Gln Ser Ala
 20 25 30
 Gln Ala Glu Ala Trp Ser Ala Ala Ala Tyr Gly Ala Leu Ala His
 35 40 45
 Asp Ile Gly Lys Ile Val Val Asp Leu Gln Val Glu Leu Gln Asp Gly
 50 55 60
 Ser Thr Trp His Pro Trp Asn Gly Pro Ile Asn Gln Pro Tyr Arg Phe
 65 70 75 80
 Lys Tyr Val Lys Ser Arg Glu Tyr Gln Leu His Gly Ala Ala Ser Ala
 85 90 95
 Leu Leu Ile His Gln Leu Leu Pro Arg Thr Ala Leu Asp Trp Leu Ser
 100 105 110
 Arg Phe Pro Glu Leu Trp Ala Gln Leu Ile Tyr Leu Phe Ala Gly Gln
 115 120 125
 Tyr Glu His Ala Gly Ile Leu Gly Glu Ile Ile Val Lys Ala Asp Gln
 130 135 140
 Ala Ser Val Ala Gln Glu Leu Gly Gly Asn Pro Asp Arg Ala Leu Ala
 145 150 155 160
 Ala Pro Lys Gln Ser Leu Gln Arg Gln Leu Ala Asp Gly Leu Arg Phe
 165 170 175
 Leu Val Lys Asp Lys Phe Lys Leu Asn Gln Pro Ser Gly Pro Ser Asp
 180 185 190
 Gly Trp Leu Thr Gln Asp Ala Leu Trp Leu Val Ser Lys Pro Ala Ala
 195 200 205
 Asp Gln Leu Arg Ala Tyr Leu Leu Ala Gln Gly Ile Asp Gly Val Pro
 210 215 220
 Ser Ser Asn Ala Pro Phe Phe Ser Met Leu Gln Asp Gln Ala Val Ile
 225 230 235 240
 Gln Thr Asn Ala Glu Asp Lys Ala Ile Trp Thr Ala Thr Val Asp Asn
 245 250 255
 Gly Ala Gly Trp Arg Asn Lys Phe Thr Leu Leu Lys Ile Ala Pro Ala
 260 265 270
 Leu Ile Trp Thr Asp Ala Ala Glu Arg Pro Ser Pro Tyr Ser Gly Ser
 275 280 285
 Leu Val Val Glu Asp Gly Thr Ala Ser Thr Glu Lys Pro Glu Thr Thr

290		295		300
Cys Glu Ile Pro Asn Gly	Pro Ala Glu Gln Gln	Gln Ala Pro Glu Thr		
305	310	315		320
Lys Met Met Leu His	Pro Ala Pro Ser Val Ala Lys Pro Ala Asn			
	325	330		335
Glu Thr Gln Ala Ile Ala	Lys Pro Ser Thr Asp Asp	Gln Glu Glu Thr		
	340	345		350
Asp Asp Leu Tyr Ala Leu	Leu Gly Asn Ile Asn Ser Pro	Leu Glu Glu		
	355	360		365
Leu Asp Thr Ser His Asp	Ser Pro Ala Ala Ser Pro	Thr Asn Thr Arg		
	370	375		380
Gly Glu Glu Asn Leu Gln	Pro Leu Gly Thr Lys Glu Pro Thr Asp			
385	390	395		400
Cys Ala Pro Glu Ala Ile	Glu Asp Val Phe Met Pro Ser Arg Ser Thr			
	405	410		415
Asp Leu Gly Gln Gly Phe	Val Gly Trp Met Lys Ser Gly Ile Ala Ala			
	420	425		430
Arg Arg Leu Phe Ile Asn	Asp Thr Lys Ala Leu Val His Thr Val Asp			
	435	440		445
Gly Thr Ala Met Leu Val	Thr Pro Gly Ile Phe Lys Arg Tyr Val Gln			
	450	455		460
Glu His Pro Val Leu Glu	Lys Leu Ala Gln Ala Lys Glu Thr Thr Gly			
465	470	475		480
Trp Lys Leu Val Gln Arg	Ala Phe Glu Lys Gln Gly Leu His Arg Lys			
	485	490		495
Thr Ser Lys Asn Leu Asn	Ile Trp Thr Ile Lys Val Ser Gly Pro Arg			
	500	505		510
Lys Thr Lys Glu Leu Lys	Ala Tyr Leu Leu Gln Asp Pro Lys Leu Leu			
	515	520		525
Phe Pro Glu Gln Pro Leu	Asp Asn Pro Ser Leu Thr Val Ile Thr Asp			
	530	535		540
Ala Glu Gly Gly Val Glu				
545	550			

<210> 203
 <211> 318
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 203
Met Leu Gln Asp Gln Ala Val Ile Gln Thr Asn Ala Glu Asp Lys Ala
1 5 10 15
Ile Trp Thr Ala Thr Val Asp Asn Gly Ala Gly Trp Arg Asn Lys Phe
20 25 30
Thr Leu Leu Lys Ile Ala Pro Ala Leu Ile Trp Thr Asp Ala Ala Glu
35 40 45
Arg Pro Ser Pro Tyr Ser Gly Ser Leu Val Val Glu Asp Gly Thr Ala
50 55 60
Ser Thr Glu Lys Pro Glu Thr Thr Cys Glu Ile Pro Asn Gly Pro Ala
65 70 75 80
Glu Gln Gln Gln Ala Pro Glu Thr Lys Met Met Leu His Gln Pro Ala
85 90 95
Pro Ser Val Ala Lys Pro Ala Asn Glu Thr Gln Ala Ile Ala Lys Pro
100 105 110
Ser Thr Asp Asp Gln Glu Glu Thr Asp Asp Leu Tyr Ala Leu Leu Gly
115 120 125
Asn Ile Asn Ser Pro Leu Glu Leu Asp Thr Ser His Asp Ser Pro
130 135 140

Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly	Glu	Glu	Asn	Leu	Gln	Gln	Pro
145					150					155					160
Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys	Ala	Pro	Glu	Ala	Ile	Glu	Asp
				165					170					175	
Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp	Leu	Gly	Gln	Gly	Phe	Val	Gly
			180					185					190		
Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp	Thr
		195					200					205			
Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr	Pro
	210					215					220				
Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys	Leu
225					230					235					240
Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala	Phe
				245					250					255	
Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile	Trp
			260					265					270		
Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr
		275					280					285			
Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn
	290					295					300				
Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu		
305					310					315					

<210> 204
 <211> 229
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 204

Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
1				5					10					15	
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
			20					25					30		
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
	35					40						45			
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
	50				55						60				
Glu	Glu	Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys
65					70					75					80
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
			85					90					95		
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
		100					105						110		
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
		115				120						125			
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
	130				135						140				
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp
145					150					155					160
Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr
			165						170					175	
Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys
		180					185					190			
Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe
	195					200						205			
Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala
	210					215					220				
Glu	Gly	Gly	Val	Glu											

225

<210> 205
 <211> 228
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 205
 Met Leu His Gln Pro Ala Pro Ser Val Ala Lys Pro Ala Asn Glu Thr
 1 5 10 15
 Gln Ala Ile Ala Lys Pro Ser Thr Asp Asp Gln Glu Glu Thr Asp Asp
 20 25 30
 Leu Tyr Ala Leu Leu Gly Asn Ile Asn Ser Pro Leu Glu Glu Leu Asp
 35 40 45
 Thr Ser His Asp Ser Pro Ala Ala Ser Pro Thr Asn Thr Arg Gly Glu
 50 55 60
 Glu Asn Leu Gln Gln Pro Leu Gly Thr Lys Glu Pro Thr Asp Cys Ala
 65 70 75 80
 Pro Glu Ala Ile Glu Asp Val Phe Met Pro Ser Arg Ser Thr Asp Leu
 85 90 95
 Gly Gln Gly Phe Val Gly Trp Met Lys Ser Gly Ile Ala Ala Arg Arg
 100 105 110
 Leu Phe Ile Asn Asp Thr Lys Ala Leu Val His Thr Val Asp Gly Thr
 115 120 125
 Ala Met Leu Val Thr Pro Gly Ile Phe Lys Arg Tyr Val Gln Glu His
 130 135 140
 Pro Val Leu Glu Lys Leu Ala Gln Ala Lys Glu Thr Thr Gly Trp Lys
 145 150 155 160
 Leu Val Gln Arg Ala Phe Glu Lys Gln Gly Leu His Arg Lys Thr Ser
 165 170 175
 Lys Asn Leu Asn Ile Trp Thr Ile Lys Val Ser Gly Pro Arg Lys Thr
 180 185 190
 Lys Glu Leu Lys Ala Tyr Leu Leu Gln Asp Pro Lys Leu Leu Phe Pro
 195 200 205
 Glu Gln Pro Leu Asp Asn Pro Ser Leu Thr Val Ile Thr Asp Ala Glu
 210 215 220
 Gly Gly Val Glu
 225

<210> 206
 <211> 140
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 206
 Met Pro Ser Arg Ser Thr Asp Leu Gly Gln Gly Phe Val Gly Trp Met
 1 5 10 15
 Lys Ser Gly Ile Ala Ala Arg Arg Leu Phe Ile Asn Asp Thr Lys Ala
 20 25 30
 Leu Val His Thr Val Asp Gly Thr Ala Met Leu Val Thr Pro Gly Ile
 35 40 45
 Phe Lys Arg Tyr Val Gln Glu His Pro Val Leu Glu Lys Leu Ala Gln
 50 55 60
 Ala Lys Glu Thr Thr Gly Trp Lys Leu Val Gln Arg Ala Phe Glu Lys
 65 70 75 80
 Gln Gly Leu His Arg Lys Thr Ser Lys Asn Leu Asn Ile Trp Thr Ile
 85 90 95

Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu	Leu
			100					105					110		
Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro	Ser
		115					120					125			
Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu				
	130					135					140				

<210> 207
 <211> 125
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 207															
Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg	Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys
1				5					10					15	
Ala	Leu	Val	His	Thr	Val	Asp	Gly	Thr	Ala	Met	Leu	Val	Thr	Pro	Gly
			20					25					30		
Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro	Val	Leu	Glu	Lys	Leu	Ala
		35					40					45			
Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu	Val	Gln	Arg	Ala	Phe	Glu
	50					55					60				
Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys	Asn	Leu	Asn	Ile	Trp	Thr
65					70					75					80
Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys	Glu	Leu	Lys	Ala	Tyr	Leu
			85						90					95	
Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu	Gln	Pro	Leu	Asp	Asn	Pro
			100					105					110		
Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly	Gly	Val	Glu			
		115					120					125			

<210> 208
 <211> 99
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 208															
Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu	His	Pro
1				5					10					15	
Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp	Lys	Leu
			20					25					30		
Val	Gln	Arg	Ala	Phe	Glu	Lys	Gln	Gly	Leu	His	Arg	Lys	Thr	Ser	Lys
		35					40					45			
Asn	Leu	Asn	Ile	Trp	Thr	Ile	Lys	Val	Ser	Gly	Pro	Arg	Lys	Thr	Lys
	50					55					60				
Glu	Leu	Lys	Ala	Tyr	Leu	Leu	Gln	Asp	Pro	Lys	Leu	Leu	Phe	Pro	Glu
65					70					75					80
Gln	Pro	Leu	Asp	Asn	Pro	Ser	Leu	Thr	Val	Ile	Thr	Asp	Ala	Glu	Gly
				85					90					95	
Gly	Val	Glu													

<210> 209
 <211> 252
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 209

Met	Arg	Arg	Asp	Ala	Pro	Ser	Asp	Ala	Gly	Phe	His	Gln	Thr	Gln	His
1				5					10					15	
Val	Val	Glu	Val	Phe	His	Glu	Glu	His	Leu	Val	Ala	Asp	Arg	Pro	Gln
			20					25					30		
Gln	Val	Arg	Met	Leu	Pro	Gly	Ala	Ala	Ala	Glu	Ala	Asp	Leu	Pro	Val
		35					40					45			
Ile	Gly	Gln	Ala	Arg	Asp	Ala	Val	Gln	Gly	Gly	Ile	Ala	Gln	Arg	Val
	50					55					60				
Leu	Arg	Met	Gly	Asp	Asp	Glu	Arg	Leu	Gly	Val	Ala	Glu	His	Ala	Leu
65					70					75					80
Val	Glu	Ala	Gly	Asp	Leu	Gln	Phe	Leu	Val	Asp	Gly	Asp	Gly	Asp	Ile
				85					90					95	
Asp	Phe	Arg	Val	Val	Leu	Leu	Asp	Arg	Arg	Gln	Ala	Ile	Gly	Gly	Arg
			100					105					110		
Gly	Ala	Tyr	Gln	Ala	Asp	His	Val	Glu	Ile	Val	Glu	Gln	Tyr	Ala	Ala
		115					120					125			
His	Arg	Ile	Ala	Glu	Arg	Arg	Arg	Asp	Gly	Gly	Val	Gln	Gln	His	Pro
	130					135					140				
Glu	Ile	Ala	Arg	Thr	Leu	Val	Glu	Ile	Glu	Gly	Asp	Val	Ala	Asp	Gln
145					150					155					160
Leu	Leu	Val	Val	Gln	Gln	Ala	Ala	His	Val	Arg	Asp	Gln	Ala	Lys	Arg
				165					170					175	
Leu	Leu	Gly	Gly	Phe	Asp	Leu	Val	Ala	Val	Pro	Thr	Asp	Gln	Leu	His
			180					185					190		
Ala	Gln	Val	Asp	Phe	Gln	Val	Ala	Asp	Arg	Arg	Ala	Asp	Arg	Gly	Val
		195					200					205			
Arg	Leu	Ala	Gln	Asp	Pro	Arg	Ser	Gly	Gly	Asn	Arg	Thr	Gly	Gly	Asp
	210					215				220					
Asp	Leu	Glu	Glu	His	Val	His	Val	Ile	Gln	Val	Met	Asn	Arg	His	Pro
225					230					235					240
Leu	Phe	Leu	Leu	Leu	Gly	Gly	Ala	Cys	Arg	Phe	Pro				
				245					250						

<210> 210
 <211> 624
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 210

gctacccgaa	ccccagcgct	ggaatcctca	gccagcgaca	gcgtcttttg	ctccgccgtg	60
acttcccaga	gctctgccat	cgaccgcttc	ttcgggatcc	agctgatgag	ggtttggttg	120
gacgtgacgg	caccttccac	gtgtgcatgg	caggtgctgc	cacgcttctt	ggacttcttc	180
ttgccactcg	gttctgcttc	gtcgtcgtct	tcaagctcga	agggcttcag	gtcgtcgtcc	240
tcgtcctcgt	catctccgtc	aacggcgccc	tcagcgcttg	cgccttgccg	ggcggccttc	300
tcggcgctccg	tcttgaccgt	cacgctgtcc	agatccgtga	tgaccagtgt	tgtgagccca	360
acgaaggcga	tcagctcctg	gaaccgatgc	gcgaacgcac	caccgacttc	aaggatggtt	420
agggcggaag	aacgcaggcg	cttggccacc	aactcgatca	ttgcaggcag	gagcagacgc	480
tcgacgttgc	cttccaccaa	tatcaccgcg	tcggaaaaaa	agagatcgca	gtgcgtcagc	540
ttcagatacc	gctgcaggaa	ttcgcgcgct	ggagcgtcgg	acgcgcccg	tttgaatagc	600
gacagattgc	gcacatccgt	gtga				624

<210> 211
 <211> 207
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 211

Ala	Thr	Arg	Thr	Pro	Ala	Leu	Glu	Ser	Ser	Ala	Ser	Asp	Ser	Val	Phe
1				5					10					15	
Cys	Ser	Ala	Val	Thr	Ser	Gln	Ser	Ser	Ala	Ile	Asp	Arg	Phe	Phe	Gly
			20					25					30		
Ile	Gln	Leu	Met	Arg	Val	Trp	Leu	Asp	Val	Thr	Ala	Pro	Ser	Thr	Cys
		35					40					45			
Ala	Trp	Gln	Val	Leu	Pro	Arg	Phe	Leu	Asp	Phe	Phe	Leu	Pro	Leu	Gly
	50					55				60					
Ser	Ala	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Lys	Gly	Phe	Arg	Ser	Ser	Ser
65					70					75					80
Ser	Ser	Ser	Ser	Ser	Pro	Ser	Thr	Ala	Pro	Ser	Ala	Pro	Ala	Pro	Cys
				85				90						95	
Ala	Ala	Ala	Phe	Ser	Ala	Ser	Val	Leu	Thr	Val	Thr	Leu	Ser	Arg	Ser
			100					105					110		
Val	Met	Thr	Ser	Val	Val	Ser	Pro	Thr	Lys	Ala	Ile	Ser	Ser	Trp	Asn
	115						120					125			
Arg	Cys	Ala	Asn	Ala	Pro	Pro	Thr	Ser	Arg	Met	Val	Arg	Ala	Glu	Glu
	130					135					140				
Arg	Arg	Arg	Leu	Ala	Thr	Asn	Ser	Ile	Ile	Ala	Gly	Arg	Ser	Arg	Arg
145					150					155					160
Ser	Thr	Leu	Pro	Ser	Thr	Asn	Ile	Thr	Ala	Ser	Glu	Lys	Lys	Arg	Ser
				165				170						175	
Gln	Cys	Val	Ser	Phe	Arg	Tyr	Arg	Cys	Arg	Asn	Ser	Arg	Ala	Gly	Ala
			180					185					190		
Ser	Asp	Ala	Pro	Val	Leu	Asn	Ser	Asp	Arg	Leu	Arg	Thr	Ser	Val	
		195					200					205			

<210> 212
 <211> 462
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 212	
tgtcgtcgca	cccaccgtca
ggaatcctca	gccagcgaca
cgaccgcttc	ttcgggatcc
gtgtgcatgg	caggtgctgc
gtcgtcgtct	tcaagctcga
aacggcgccc	tcagcgcttg
cacgctgtcc	agatccgtga
gaaccgatgc	gcgaacgcac
cccgaaacctt	ggctctggtaa
gctacccgaa	ccccagcgct
acttcccaga	gctctgccat
gacgtgacgg	caccttccac
ggacttcttc	ttgccactcg
gtcgtcgtcc	tcgtcctcgt
ggcggccttc	tcggcgctccg
acgaaggcga	tcagctcctg
aaggatggtt	ag
	60
	120
	180
	240
	300
	360
	420
	462

<210> 213
 <211> 153
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 213															
Cys	Arg	Arg	Thr	His	Arg	His	Arg	Asn	Leu	Gly	Leu	Val	Ser	Tyr	Pro
1				5					10					15	
Asn	Pro	Ser	Ala	Gly	Ile	Leu	Ser	Gln	Arg	Gln	Arg	Leu	Leu	Leu	Arg
			20					25					30		
Arg	Asp	Phe	Pro	Glu	Leu	Cys	His	Arg	Pro	Leu	Leu	Arg	Asp	Pro	Ala
		35					40					45			
Asp	Glu	Gly	Leu	Val	Gly	Arg	Asp	Gly	Thr	Phe	His	Val	Cys	Met	Ala
	50					55					60				
Gly	Ala	Ala	Thr	Leu	Leu	Gly	Leu	Leu	Leu	Ala	Thr	Arg	Phe	Cys	Phe
65					70					75					80

Val Val Val Phe Lys Leu Glu Gly Leu Gln Val Val Val Leu Val Leu
85 90 95
Val Ile Ser Val Asn Gly Ala Leu Ser Ala Cys Ala Leu Arg Gly Gly
100 105 110
Leu Leu Gly Val Arg Leu Asp Arg His Ala Val Gln Ile Arg Asp Asp
115 120 125
Gln Cys Cys Glu Pro Asn Glu Gly Asp Gln Leu Leu Glu Pro Met Arg
130 135 140
Glu Arg Thr Thr Asp Phe Lys Asp Gly
145 150

<210> 214
<211> 972
<212> DNA
<213> Pseudomonas aeruginosa

<400> 214
caggaagtcg gcgagctgaa ggatgtcctc gtggccaagt atgcccttgg cgtagtcact 60
gcccacgccg tagttgaacg tcctgacgcc ggccacagcc tccaggcttc ggacatatcg 120
ctcttggtcg gccttggttc tgctcgcgct ggtctgccgg acacgcgagc tgtaattctc 180
gaactcttct tcaagttcgg agatccgcct gcggatgtcg ttctgcagcc aaaccttgat 240
gtcggccttg aacgtctttg caatagacca gtaaaagctg tggatggtcg agacatgaac 300
cagcgggtca tcgttgacgt ccgccaggat ttcattggtg gcaaggctcg tatacgtgat 360
gcacgcgact atctgcttcc tcgcccgcac gctggcgccg tgctccgaga tcacccagtc 420
cagcgccttg atgagggagg tggctcttgcc ggaacctgcg ccagcacgaa ccacgaaggg 480
ctgcgagggc gtcgctacaa tgcattgcgt gatctcgctg tcggcgctcg tatctgggct 540
atcaattcgt ctgctcatgc cgtctgcccc gggtaacaa tgatagcgac aacatcggct 600
gtagtcgggt caatagtcgc gacctcggtg gcgatggcag catccgcctc aagctcgtgg 660
gccactttgg cttcgagcca ggccaagccc tcggcgatgt acgcgggaac cttccagcca 720
ttgagcggcc cgcttgcgag tacctccagc gcaaagcggg tcttgctgaa gttcttgccg 780
accaccctat cgtgtaactt ctcagccagc tcttcagggc tgctcggtgc gcgcttgagc 840
ttgaggccga ccgaccggtt tgcctcagcc tggcaccagt ccgcgttctc aagaccaaag 900
gcctcctcaa gtgtgcggcc gcagagctgt gatgtcgtcg caccacccgt caccgaaacc 960
ttggtctggt aa 972

<210> 215
<211> 323
<212> PRT
<213> Pseudomonas aeruginosa

<400> 215
Gln Glu Val Gly Glu Leu Lys Asp Val Leu Val Ala Lys Tyr Ala Leu
1 5 10 15
Gly Val Val Thr Ala His Ala Val Val Glu Arg Pro Asp Ala Gly His
20 25 30
Ser Leu Gln Ala Ser Asp Ile Ser Leu Leu Val Gly Leu Val Pro Val
35 40 45
Ala Arg Gly Leu Pro Asp Thr Arg Ala Val Ile Leu Glu Leu Phe Phe
50 55 60
Lys Phe Gly Asp Pro Pro Ala Asp Val Val Leu Gln Pro Asn Leu Asp
65 70 75 80
Val Gly Leu Glu Arg Leu Cys Asn Arg Pro Val Lys Ala Val Asp Gly
85 90 95
Arg Asp Met Asn Gln Arg Val Ile Val Asp Val Arg Gln Asp Phe Ile
100 105 110
Gly Gly Lys Val Gly Ile Arg Asp Ala Arg Asp Tyr Leu Leu Pro Arg
115 120 125
Pro His Ala Gly Ala Val Leu Arg Asp His Pro Val Gln Arg Leu Asp

Pro Thr Ser Leu Arg Arg Met Leu Pro Ser Pro Pro Arg Ser Arg Leu
100 105 110
Leu Ser Arg Leu Gln Pro Met Leu Ser Leu Ser Leu Leu Thr Arg Gly
115 120 125
Arg Arg His Glu Gln Thr Asn
130 135

<210> 218
<211> 363
<212> DNA
<213> Pseudomonas aeruginosa

<400> 218
gggaggtggt cttgccggaa cctgcgccag cacgaaccac gaagggctgc ggaggcgctcg 60
ctacaatgca tgcgtggatc tcgcggtcg cgtcgggtatc tgggctatca attcgtctgc 120
tcatgccgtc tgccccgggt caacaatgat agcgacaaca tcggctgtag tcgggtcaat 180
agtcgcgacc tcggtggcga tggcagcatc cgcctcaagc tcgtgggcca ctttggcttc 240
gagccaggcc aagccctcgg cgatgtacgc gggaaccttc cagccattga gcggcccgcg 300
tgcgagtacc tccagcgcaa agcgggtcct gtcgaagtgc ttgccgacca ccctatcggtg 360
taa 363

<210> 219
<211> 120
<212> PRT
<213> Pseudomonas aeruginosa

<400> 219
Gly Arg Trp Ser Cys Arg Asn Leu Arg Gln His Glu Pro Arg Arg Ala
1 5 10 15
Ala Glu Ala Ser Leu Gln Cys Met Arg Gly Ser Arg Gly Arg Arg Arg
20 25 30
Tyr Leu Gly Tyr Gln Phe Val Cys Ser Cys Arg Leu Pro Arg Val Asn
35 40 45
Asn Asp Ser Asp Asn Ile Gly Cys Ser Arg Leu Asn Ser Arg Asp Leu
50 55 60
Gly Gly Asp Gly Ser Ile Arg Leu Lys Leu Val Gly His Phe Gly Phe
65 70 75 80
Glu Pro Gly Gln Ala Leu Gly Asp Val Arg Gly Asn Leu Pro Ala Ile
85 90 95
Glu Arg Pro Ala Cys Glu Tyr Leu Gln Arg Lys Ala Gly Leu Val Glu
100 105 110
Val Leu Ala Asp His Pro Ile Val
115 120

<210> 220
<211> 1947
<212> DNA
<213> Pseudomonas aeruginosa

<400> 220
cccggggcag acggcatgag cagacgaatt gatagcccag ataccgacgc cgaccgcgag 60
atccacgcat gcattgtagc gacgcctccg cagcccttcg tggttcgtgc tggcgcaggt 120
tccggcaaga ccacctccct catcaaggcg ctggactggg tgatctcgga gcacggcgcc 180
agcatgcggg cgaggaagca gatagtcgcg tgcatacagt ataccgacct tgccaccaat 240
gaaatcctgg cggacgtcaa cgatgacccg ctgggttcagt tctcgacct ccacagcttt 300
tactggtcta ttgcaaagac gttccaggcc gacatcaagg tttggctgca gaacgacatc 360
cgcaggcgga tctccgaact tgaagaagag ttcgagaatt acagctcgcg tgtccggcag 420

accacgcgcg	acaggaacaa	ggccgaccaa	gagcgatatg	tccgaagcct	ggaggctgtg	480
gccggcgctca	ggacgttcaa	ctacggcgctg	ggcagtgact	acgccaaggg	catacttggc	540
cacgaggaca	tccttcagct	cgccgacttc	ctgctacaaa	accgcccgt	gttccgacgg	600
gtcgtggcgc	tgagctaccc	gttcgtgttt	atcgatgaga	gtcaggacac	gttcccgggt	660
gtagtgaagt	ctttcaagga	agtggaagcc	cagatgcagg	gcaagttctg	ccttggtttt	720
ttcggcgacc	cgatgcagtc	gatcttcatg	agaggcgag	gggacatcca	gcttgaggat	780
cattggcggg	ccatcacgaa	gccggagaac	tttcgctgcg	ccaagcagat	ccttgacgtc	840
gccaatgccg	tgcgcgcgca	gggcgatggc	atggagcaag	tccgcgggct	gcacgagagg	900
gtcgatggga	acctcaagct	ggtggagggg	tcggcccggg	tggtcgtctt	gccgaacacg	960
ctgaaccgaa	ccgaggcttt	ggcaagagtc	cgagcgtgga	gctcggcgac	gaacaacgac	1020
gaggggttga	caaccccaga	catcgagtc	aagattcttg	tcatcgtgca	ccgcatggcc	1080
gcaaaccggc	ttggcttcgg	cggcatctac	tcggcgctga	acgacaagac	gtcggatgcc	1140
atgaagcaag	ggatgcagga	cggcaccggg	tggcccgttc	gaccttcct	aagttttgcg	1200
ctaccgatcg	ttgcagctgt	gaaggccggc	aatgagttcg	cggcgatgag	cctgctccgg	1260
gaattcagcc	cgcgccctggc	gcctgcggct	ctgaccggcc	gacgtgccgc	ggatgtattg	1320
cgagagctgc	acgctgctgc	gtcagggctt	gtcgccatgc	tggaacgagg	agggaccacc	1380
attggtgaca	tagctctcca	tctctgtgac	acgggtcttt	ttgagttcga	cgagcgctat	1440
gcgcgtgttc	ttgggtttgt	cagggatatt	gctgacaccg	ctcaggagcc	cgaggctgct	1500
gatgcagttc	cgccgaagg	attatccttg	gacgcgacaa	tggccaagtt	cttcaattgc	1560
tctgcgcaag	agctttggcc	ctatgaacgc	tatgtctcag	aaggctcccc	ctatgccacg	1620
cagcacggcg	tgaagggagc	gcagttcgaa	cgcgctcatg	tggtgatgga	cgaggaagaa	1680
agcgactacc	gaacgtacaa	ctacgagcgt	gtcttcgcga	gtgctgaggc	ccgcgctgca	1740
gatcgtgcac	gagcactaga	cggtgatgaa	aacacttgga	gccgaacgct	gcgactgctt	1800
tacgtctgct	gcactcgtgc	ccagcggggg	ctggtactag	cggttctttg	cgccgaccct	1860
gcgaccaccc	tggaaaacgt	cgtggcgagc	gggatcttgc	cgcgaaagcgc	agtctttacg	1920
caggaagtgt	tagttggatg	gccatag				1947

<210> 221

<211> 648

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 221

Pro	Gly	Ala	Asp	Gly	Met	Ser	Arg	Arg	Ile	Asp	Ser	Pro	Asp	Thr	Asp
1				5					10					15	
Ala	Asp	Arg	Glu	Ile	His	Ala	Cys	Ile	Val	Ala	Thr	Pro	Pro	Gln	Pro
			20					25					30		
Phe	Val	Val	Arg	Ala	Gly	Ala	Gly	Ser	Gly	Lys	Thr	Thr	Ser	Leu	Ile
		35					40					45			
Lys	Ala	Leu	Asp	Trp	Val	Ile	Ser	Glu	His	Gly	Ala	Ser	Met	Arg	Ala
	50					55					60				
Arg	Lys	Gln	Ile	Val	Ala	Cys	Ile	Thr	Tyr	Thr	Asp	Leu	Ala	Thr	Asn
65					70					75					80
Glu	Ile	Leu	Ala	Asp	Val	Asn	Asp	Asp	Pro	Leu	Val	His	Val	Ser	Thr
				85				90						95	
Ile	His	Ser	Phe	Tyr	Trp	Ser	Ile	Ala	Lys	Thr	Phe	Gln	Ala	Asp	Ile
			100					105					110		
Lys	Val	Trp	Leu	Gln	Asn	Asp	Ile	Arg	Arg	Arg	Ile	Ser	Glu	Leu	Glu
		115					120					125			
Glu	Glu	Phe	Glu	Asn	Tyr	Ser	Ser	Arg	Val	Arg	Gln	Thr	Thr	Arg	Asp
	130					135					140				
Arg	Asn	Lys	Ala	Asp	Gln	Glu	Arg	Tyr	Val	Arg	Ser	Leu	Glu	Ala	Val
145					150					155					160
Ala	Gly	Val	Arg	Thr	Phe	Asn	Tyr	Gly	Val	Gly	Ser	Asp	Tyr	Ala	Lys
				165				170						175	
Gly	Ile	Leu	Gly	His	Glu	Asp	Ile	Leu	Gln	Leu	Ala	Asp	Phe	Leu	Leu
			180				185						190		
Gln	Asn	Arg	Pro	Leu	Phe	Arg	Arg	Val	Val	Ala	Leu	Ser	Tyr	Pro	Phe
		195					200					205			

Val	Phe	Ile	Asp	Glu	Ser	Gln	Asp	Thr	Phe	Pro	Gly	Val	Val	Lys	Ser
	210					215					220				
Phe	Lys	Glu	Val	Glu	Ala	Gln	Met	Gln	Gly	Lys	Phe	Cys	Leu	Gly	Phe
225					230					235					240
Phe	Gly	Asp	Pro	Met	Gln	Ser	Ile	Phe	Met	Arg	Gly	Ala	Gly	Asp	Ile
				245					250					255	
Gln	Leu	Glu	Asp	His	Trp	Arg	Ala	Ile	Thr	Lys	Pro	Glu	Asn	Phe	Arg
			260					265					270		
Cys	Ala	Lys	Gln	Ile	Leu	Asp	Val	Ala	Asn	Ala	Val	Arg	Ala	Gln	Gly
	275					280					285				
Asp	Gly	Met	Glu	Gln	Val	Arg	Gly	Leu	His	Glu	Arg	Val	Asp	Gly	Asn
290						295				300					
Leu	Lys	Leu	Val	Glu	Gly	Ser	Ala	Arg	Met	Phe	Val	Leu	Pro	Asn	Thr
305				310						315					320
Leu	Asn	Arg	Thr	Glu	Ala	Leu	Ala	Arg	Val	Arg	Ala	Trp	Ser	Ser	Ala
			325						330					335	
Thr	Asn	Asn	Asp	Glu	Gly	Trp	Thr	Thr	Pro	Asp	Ile	Ala	Val	Lys	Ile
			340				345						350		
Leu	Val	Ile	Val	His	Arg	Met	Ala	Ala	Asn	Arg	Leu	Gly	Phe	Gly	Gly
	355						360					365			
Ile	Tyr	Ser	Ala	Leu	Asn	Asp	Lys	Thr	Ser	Asp	Ala	Met	Lys	Gln	Gly
370					375					380					
Met	Gln	Asp	Gly	Thr	Gly	Trp	Pro	Val	Arg	Pro	Phe	Leu	Ser	Phe	Ala
385					390					395					400
Leu	Pro	Ile	Val	Ala	Ala	Val	Lys	Ala	Gly	Asn	Glu	Phe	Ala	Ala	Met
			405						410					415	
Ser	Leu	Leu	Arg	Glu	Phe	Ser	Pro	Arg	Leu	Ala	Pro	Ala	Ala	Leu	Thr
			420					425					430		
Gly	Arg	Arg	Ala	Ala	Asp	Val	Leu	Arg	Glu	Leu	His	Ala	Ala	Ala	Ser
	435					440						445			
Arg	Leu	Val	Ala	Met	Leu	Asp	Glu	Ala	Gly	Thr	Thr	Ile	Gly	Asp	Ile
450						455					460				
Ala	Leu	His	Leu	Cys	Asp	Thr	Gly	Leu	Phe	Glu	Phe	Asp	Glu	Arg	Tyr
465					470					475					480
Ala	Arg	Val	Leu	Gly	Phe	Val	Arg	Asp	Ile	Ala	Asp	Thr	Ala	Gln	Glu
			485						490					495	
Pro	Glu	Ala	Ala	Asp	Ala	Val	Pro	Ala	Glu	Gly	Leu	Ser	Leu	Asp	Ala
		500						505					510		
Thr	Met	Ala	Lys	Phe	Phe	Asn	Cys	Ser	Ala	Gln	Glu	Leu	Trp	Pro	Tyr
	515					520						525			
Glu	Arg	Tyr	Val	Ser	Glu	Gly	Ser	Pro	Tyr	Ala	Thr	Gln	His	Gly	Val
530					535						540				
Lys	Gly	Ala	Gln	Phe	Glu	Arg	Val	Met	Val	Val	Met	Asp	Glu	Glu	Glu
545					550					555					560
Ser	Asp	Tyr	Arg	Thr	Tyr	Asn	Tyr	Glu	Arg	Val	Phe	Ala	Ser	Ala	Glu
			565					570						575	
Ala	Arg	Ala	Ala	Asp	Arg	Ala	Arg	Ala	Leu	Asp	Gly	Asp	Glu	Asn	Thr
		580						585					590		
Trp	Ser	Arg	Thr	Leu	Arg	Leu	Leu	Tyr	Val	Cys	Cys	Thr	Arg	Ala	Gln
	595					600						605			
Arg	Gly	Leu	Val	Leu	Ala	Phe	Phe	Val	Ala	Asp	Pro	Ala	Thr	Thr	Leu
610					615						620				
Glu	Asn	Val	Val	Ala	Ser	Gly	Ile	Leu	Pro	Arg	Ser	Ala	Val	Phe	Thr
625				630						635					640
Gln	Glu	Val	Leu	Val	Gly	Trp	Pro								
				645											

<210> 222

<211> 408
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 222
 tcgctgcat cacgtatacc gaccttgcca ccaatgaaat cctggcggac gtcaacgatg 60
 acccgctggt tcatgtctcg accatccaca gcttttactg gtctattgca aagacgttcc 120
 aggccgacat caaggtttgg ctgcagaacg acatccgcag gcggatctcc gaacttgaag 180
 aagagttcga gaattacagc tcgctgtgcc ggcagaccac gcgcgacagg aacaaggccg 240
 accaagagcg atatgtccga agcctggagg ctgtggccgg cgtcaggacg ttcaactacg 300
 gcgtgggcag tgactacgcc aagggcatac ttggccacga ggacatcctt cagctcgccg 360
 acttcctgct acaaaaccgc ccgctgttcc gacgggtcgt ggcgctga 408

<210> 223
 <211> 135
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 223
 Ser Arg Ala Ser Arg Ile Pro Thr Leu Pro Pro Met Lys Ser Trp Arg
 1 5 10 15
 Thr Ser Thr Met Thr Arg Trp Phe Met Ser Arg Pro Ser Thr Ala Phe
 20 25 30
 Thr Gly Leu Leu Gln Arg Arg Ser Arg Pro Thr Ser Arg Phe Gly Cys
 35 40 45
 Arg Thr Thr Ser Ala Gly Gly Ser Pro Asn Leu Lys Lys Ser Ser Arg
 50 55 60
 Ile Thr Ala Arg Val Ser Gly Arg Pro Arg Ala Thr Gly Thr Arg Pro
 65 70 75 80
 Thr Lys Ser Asp Met Ser Glu Ala Trp Arg Leu Trp Pro Ala Ser Gly
 85 90 95
 Arg Ser Thr Thr Ala Trp Ala Val Thr Thr Pro Arg Ala Tyr Leu Ala
 100 105 110
 Thr Arg Thr Ser Phe Ser Ser Pro Thr Ser Cys Tyr Lys Thr Ala Arg
 115 120 125
 Cys Ser Asp Gly Ser Trp Arg
 130 135

<210> 224
 <211> 615
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 224
 gaagggtcga acgggcccaac cgggtgccgtc ctgcatecct tgcttcatgg catccgacgt 60
 cttgtcggtc agcgccgagt agatgccgcc gaagccaagc cggtttgagg ccatgcggtg 120
 cacgatgaca agaattctga ctgcgatgtc tgggggtgtc caaccctcgt cgttgttcgt 180
 cgccgagctc cacgctcgga ctcttgccaa agcctcgggt cggttcagcg tgttcggcaa 240
 gacgaacatc cgggcccagc cctccaccag cttgaggttc ccatcgaccc tctcgtgcag 300
 cccgcggact tgctccatgc catcgccctg cgcgcgacg gcattggcga cgtcaaggat 360
 ctgcttggcg cagcgaaagt tctccggctt cgtgatggcc cgccaatgat cctcaagctg 420
 gatgtccccct gcgcctctca tgaagatcga ctgcatcggt tcgccgaaaa aaccaaggca 480
 gaacttgccc tgcattctggg cttccacttc cttgaaagac ttactacac ccgggaacgt 540
 gtcttgactc tcatcgataa acacgaacgg gtagctcagc gccacgaccc gtcggaacag 600
 cgggcgggtt tgtag 615

<210> 225
 <211> 204

<212> PRT
 <213> Pseudomonas aeruginosa

<400> 225
 Glu Gly Ser Asn Gly Pro Thr Gly Ala Val Leu His Pro Leu Leu His
 1 5 10 15
 Gly Ile Arg Arg Leu Val Val Gln Arg Arg Val Asp Ala Ala Glu Ala
 20 25 30
 Lys Pro Val Cys Gly His Ala Val His Asp Asp Lys Asn Leu Asp Cys
 35 40 45
 Asp Val Trp Gly Cys Pro Thr Leu Val Val Val Arg Arg Arg Ala Pro
 50 55 60
 Arg Ser Asp Ser Cys Gln Ser Leu Gly Ser Val Gln Arg Val Arg Gln
 65 70 75 80
 Asp Glu His Pro Gly Arg Pro Leu His Gln Leu Glu Val Pro Ile Asp
 85 90 95
 Pro Leu Val Gln Pro Ala Asp Leu Leu His Ala Ile Ala Leu Arg Ala
 100 105 110
 His Gly Ile Gly Asp Val Lys Asp Leu Leu Gly Ala Ala Lys Val Leu
 115 120 125
 Arg Leu Arg Asp Gly Pro Pro Met Ile Leu Lys Leu Asp Val Pro Cys
 130 135 140
 Ala Ser His Glu Asp Arg Leu His Arg Val Ala Glu Lys Thr Lys Ala
 145 150 155 160
 Glu Leu Ala Leu His Leu Gly Phe His Phe Leu Glu Arg Leu His Tyr
 165 170 175
 Thr Arg Glu Arg Val Leu Thr Leu Ile Asp Lys His Glu Arg Val Ala
 180 185 190
 Gln Arg His Asp Pro Ser Glu Gln Arg Ala Val Leu
 195 200

<210> 226
 <211> 327
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 226
 atgccgccga agccaagccg gtttgcggcc atgcggtgca cgatgacaag aatcttgact 60
 gcgatgtctg gggttgtcca accctcgtcg ttgttcgtcg ccgagctcca cgctcggact 120
 cttgccaaag cctcggttcg gttcagcgtg ttcggcaaga cgaacatccg ggccgacccc 180
 tccaccagct tgaggttccc atcgaccctc tcgtgcagcc cgcggtactg ctccatgcca 240
 tcgccctgcg cgcgcacggc attggcgacg tcaaggatct gcttggcgca gcgaaagtgc 300
 tccggcttcg tgatggcccg ccaatga 327

<210> 227
 <211> 108
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 227
 Met Pro Pro Lys Pro Ser Arg Phe Ala Ala Met Arg Cys Thr Met Thr
 1 5 10 15
 Arg Ile Leu Thr Ala Met Ser Gly Val Val Gln Pro Ser Ser Leu Phe
 20 25 30
 Val Ala Glu Leu His Ala Arg Thr Leu Ala Lys Ala Ser Val Arg Phe
 35 40 45
 Ser Val Phe Gly Lys Thr Asn Ile Arg Ala Asp Pro Ser Thr Ser Leu
 50 55 60

Arg Phe Pro Ser Thr Leu Ser Cys Ser Pro Arg Thr Cys Ser Met Pro
65 70 75 80
Ser Pro Cys Ala Arg Thr Ala Leu Ala Thr Ser Arg Ile Cys Leu Ala
85 90 95
Gln Arg Lys Phe Ser Gly Phe Val Met Ala Arg Gln
100 105

<210> 228
<211> 399
<212> DNA
<213> Pseudomonas aeruginosa

<400> 228
cgctcgccaat gccgtgcgcg cgcagggcga tggcatggag caagtccgcg ggctgcacga 60
gagggtcgat gggaacctca agctggtgga ggggtcggcc cggatgttcg tcttgccgaa 120
cacgctgaac cgaaccgagg ctttggcaag agtccgagcg tggagctcgg cgacgaacaa 180
cgacgaggggt tggacaaccc cagacatcgc agtcaagatt cttgtcatcg tgcaccgcat 240
ggccgcaaac cggcttggtc tcggcggcat ctactcggcg ctgaacgaca agacgtcgga 300
tgccatgaag caagggatgc aggacggcac cggttggccc gttcgaccct tcctaagttt 360
tgcgtaccg atcgttgacg ctgtgaaggc cggcaatga 399

<210> 229
<211> 132
<212> PRT
<213> Pseudomonas aeruginosa

<400> 229
Arg Arg Gln Cys Arg Ala Arg Ala Gly Arg Trp His Gly Ala Ser Pro
1 5 10 15
Arg Ala Ala Arg Glu Gly Arg Trp Glu Pro Gln Ala Gly Gly Gly Val
20 25 30
Gly Pro Asp Val Arg Leu Ala Glu His Ala Glu Pro Asn Arg Gly Phe
35 40 45
Gly Lys Ser Pro Ser Val Glu Leu Gly Asp Glu Gln Arg Arg Gly Leu
50 55 60
Asp Asn Pro Arg His Arg Ser Gln Asp Ser Cys His Arg Ala Pro His
65 70 75 80
Gly Arg Lys Pro Ala Trp Leu Arg Arg His Leu Leu Gly Ala Glu Arg
85 90 95
Gln Asp Val Gly Cys His Glu Ala Arg Asp Ala Gly Arg His Arg Leu
100 105 110
Ala Arg Ser Thr Leu Pro Lys Phe Cys Ala Thr Asp Arg Cys Ser Cys
115 120 125
Glu Gly Arg Gln
130

<210> 230
<211> 330
<212> DNA
<213> Pseudomonas aeruginosa

<400> 230
cgctcgtcga actcaaaaag acccgtgtca cagagatgga gagctatgtc accaatgggtg 60
gtccctgcct cgtccagcat ggcgacaagc ctcgacgcag cagcgtgcag ctctcgcaat 120
acatccgcgg cacgtcggcc ggtcagagcc gcaggcgcca ggcgcgggct gaattcccgg 180
agcagggtca tcgccgcgaa ctcattgccg gccttcacag ctgcaacgat cggtagcgca 240
aaacttagga agggtcgaac gggccaaccg gtgccgtcct gcatcccttg cttcatggca 300

tccgacgtct tgtcgttcag cgccgagtag

330

<210> 231

<211> 109

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 231

Arg	Ser	Ser	Asn	Ser	Lys	Arg	Pro	Val	Ser	Gln	Arg	Trp	Arg	Ala	Met
1				5					10					15	
Ser	Pro	Met	Val	Val	Pro	Ala	Ser	Ser	Ser	Met	Ala	Thr	Ser	Leu	Asp
			20					25					30		
Ala	Ala	Ala	Cys	Ser	Ser	Arg	Asn	Thr	Ser	Ala	Ala	Arg	Arg	Pro	Val
		35					40					45			
Arg	Ala	Ala	Gly	Ala	Arg	Arg	Gly	Leu	Asn	Ser	Arg	Ser	Arg	Leu	Ile
	50					55				60					
Ala	Ala	Asn	Ser	Leu	Pro	Ala	Phe	Thr	Ala	Ala	Thr	Ile	Gly	Ser	Ala
65					70					75					80
Lys	Leu	Arg	Lys	Gly	Arg	Thr	Gly	Gln	Pro	Val	Pro	Ser	Cys	Ile	Pro
			85					90						95	
Cys	Phe	Met	Ala	Ser	Asp	Val	Leu	Ser	Phe	Ser	Ala	Glu			
			100					105							

<210> 232

<211> 321

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 232

tccttcggcc	ggaactgcat	cagcagcctc	gggctcctga	gcggtgtcag	caatatccct	60
gacaaaccca	agaacacgcg	catagcgctc	gtcgaactca	aaaagacccg	tgtcacagag	120
atggagagct	atgtcaccaa	tggtgggtccc	tgctctgtcc	agcatggcga	caagcctcga	180
cgcagcagcg	tgcagctctc	gcaatacatc	cgcggcacgt	cggccggtca	gagccgcagg	240
cgccaggcgc	gggctgaatt	cccggagcag	gtcatcgcc	gcgaactcat	tgccggcctt	300
cacagctgca	acgatcggta	g				321

<210> 233

<211> 106

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 233

Ser	Phe	Gly	Arg	Asn	Cys	Ile	Ser	Ser	Leu	Gly	Leu	Leu	Ser	Gly	Val
1				5					10					15	
Ser	Asn	Ile	Pro	Asp	Lys	Pro	Lys	Asn	Thr	Arg	Ile	Ala	Leu	Val	Glu
			20					25					30		
Leu	Lys	Lys	Thr	Arg	Val	Thr	Glu	Met	Glu	Ser	Tyr	Val	Thr	Asn	Gly
		35				40						45			
Gly	Pro	Cys	Leu	Val	Gln	His	Gly	Asp	Lys	Pro	Arg	Arg	Ser	Ser	Val
	50					55				60					
Gln	Leu	Ser	Gln	Tyr	Ile	Arg	Gly	Thr	Ser	Ala	Gly	Gln	Ser	Arg	Arg
65					70					75					80
Arg	Gln	Ala	Arg	Ala	Glu	Phe	Pro	Glu	Gln	Ala	His	Arg	Arg	Glu	Leu
			85					90						95	
Ile	Ala	Gly	Leu	His	Ser	Cys	Asn	Asp	Arg						
			100					105							

<210> 234
 <211> 639
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 234
 atcgactctt tgaggaaaatg cgtgggaagc ctggaaaagt gctgtttcgc ctgcaaagaa 60
 ataattcatg ttcatgcatg tcgttgctcg cagtgcggcg agtcccaagg ctggcgagg 120
 ttcatgagct ctccaacctc agtagttgcg ttggtcctta gcctttttatc aatcgctgcc 180
 acaaaacctg tggagcgatt gttcgatgcc cagcgagcag agctacaaat ctccatcacg 240
 ggtggtgatt acaaagctgc ccagcttatg ttgaccaata acgggtcaaa gcctgcaact 300
 ttagtttccct tcgaaatcac atcgaaagcc acgaccaata cgaaaacatg gtttttggtgta 360
 agcaatacgg atggcgaaat tctggagcca ggcaaaaactt acaaaatcag ggcctcaacc 420
 gatgagtcta tccccaaaat tgtcgaagct gagcgctcgga cgattttgaa gtctcagtac 480
 gcacttgacg ataattgcga attaacccgct aaatacatag aggccacggg gcagaagggt 540
 gtgctgtgtc aaccgttcat gtgcgacaca cctcctgaaa aggggtggcct gccccctggt 600
 aaacctggca taccatttgg gtaccttggc caagaatga 639

<210> 235
 <211> 212
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 235
 Ile Asp Ser Leu Arg Lys Cys Val Gly Ser Leu Glu Lys Cys Cys Phe
 1 5 10 15
 Ala Cys Lys Glu Ile Ile His Val His Ala Ile Arg Cys Arg Gln Cys
 20 25 30
 Gly Glu Ser Gln Gly Trp Arg Arg Phe Met Ser Ser Pro Thr Ser Val
 35 40 45
 Val Ala Leu Val Leu Ser Leu Leu Ser Ile Ala Ala Thr Lys Pro Val
 50 55 60
 Glu Arg Leu Phe Asp Ala Gln Arg Ala Glu Leu Gln Ile Ser Ile Thr
 65 70 75 80
 Gly Gly Asp Tyr Lys Ala Ala Gln Leu Met Leu Thr Asn Asn Gly Ser
 85 90 95
 Lys Pro Ala Thr Leu Val Ser Phe Glu Ile Thr Ser Lys Ala Thr Thr
 100 105 110
 Asn Thr Lys Thr Trp Phe Leu Val Ser Asn Thr Asp Gly Glu Ile Leu
 115 120 125
 Glu Pro Gly Lys Thr Tyr Lys Ile Arg Ala Ser Thr Asp Glu Ser Ile
 130 135 140
 Pro Lys Ile Val Glu Ala Glu Arg Arg Thr Ile Leu Lys Ser Gln Tyr
 145 150 155 160
 Ala Leu Ala Asp Asn Cys Glu Leu Thr Ala Lys Tyr Ile Glu Ala Thr
 165 170 175
 Gly Gln Lys Val Val Arg Val Gln Pro Phe Met Cys Asp Thr Pro Pro
 180 185 190
 Glu Lys Gly Gly Leu Pro Pro Gly Lys Pro Gly Ile Pro Ile Trp Tyr
 195 200 205
 Leu Gly Gln Glu
 210

<210> 236
 <211> 423
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 236
aggccacggg gcagaagggt gtgctgtgtgc aaccgttcat gtgcgacaca cctcctgaaa 60
agggtggcct gccccctggt aaacctggca taccatttg gtaccttggg caagaatgat 120
gtttttatgc cgccctgggc tttgacgccg attaatgcaaa gctgtgttcg ctcatccaat 180
acgtccctcg cccagttaaa cgactgttat gtatatgggt gctgccgcta cgtaatacct 240
tggccctacg catacgaagt taattctgaa agcgttcaat ggacaatctt cctcctcggc 300
gtcgactgca gcggttaagg gatctacttt cgaaacactg caagggtagg tccttttttg 360
gcagcgtcca tataccgacc gtggtatggc tcagatgcgc tggtagtgca tttcaccaaa 420
taa 423

<210> 237
<211> 140
<212> PRT
<213> Pseudomonas aeruginosa

<400> 237
Arg Pro Arg Gly Arg Arg Leu Cys Val Cys Asn Arg Ser Cys Ala Thr
1 5 10 15
His Leu Leu Lys Arg Val Ala Cys Pro Leu Val Asn Leu Ala Tyr Pro
20 25 30
Phe Gly Thr Leu Val Lys Asn Asp Val Phe Met Pro Pro Trp Ala Leu
35 40 45
Thr Pro Ile Lys Gln Ser Cys Val Arg Ser Ser Asn Thr Ser Leu Ala
50 55 60
Gln Leu Asn Asp Cys Tyr Val Tyr Gly Cys Cys Arg Tyr Val Ile Pro
65 70 75 80
Trp Pro Tyr Ala Tyr Glu Val Asn Ser Glu Ser Val Gln Trp Thr Ile
85 90 95
Phe Leu Leu Gly Val Asp Cys Ser Gly Lys Val Ile Tyr Phe Arg Asn
100 105 110
Thr Ala Arg Val Gly Pro Phe Leu Ala Ala Ser Ile Tyr Arg Pro Trp
115 120 125
Tyr Gly Ser Asp Ala Leu Val Leu His Phe Thr Lys
130 135 140

<210> 238
<211> 546
<212> DNA
<213> Pseudomonas aeruginosa

<400> 238
gccaaaatga ttgtcattga caaaaatcta gaacatcttg ttgcgcaatg cgctatatgt 60
gaaaaaactt tatttgacga gttttctctc aagattcaat tggggcatac atattacgag 120
ccaaaatctt tgcccgctc tgcaagcatt gtatatgggt cgcatccagc cccgtcgacg 180
tttttttttg aacccaaaaga aattcagcaa aatttggtgc tgaaatccgg tgagcaagtc 240
atcacctgca gtaaacatcg atacaaaata ccgttagatt attttggtct ggtgcaaacc 300
aaaggaaccc ttgcgcgatt gttcgtgcag gtaacctgta atgacgggtca ggtagagccg 360
gggttcgacg ggtacgtaac ccttgaaatc gtcaatatgt cgccttggac gatagaaata 420
ccggccgtga gcgatatagc acaactttat ttggtgaaat gcagtaccag cgcactctgag 480
ccataccacg gtcggtatat ggacgctgcc aaaaaaggac ctacccttgc agtgtttcga 540
aagtag 546

<210> 239
<211> 181
<212> PRT
<213> Pseudomonas aeruginosa

<400> 239

Ala Lys Met Ile Val Ile Asp Lys Asn Leu Glu His Leu Val Ala Gln
1 5 10 15
Cys Ala Ile Cys Glu Lys Thr Leu Phe Asp Glu Phe Ser Leu Lys Ile
20 25 30
Gln Leu Gly His Thr Tyr Tyr Glu Pro Lys Ser Leu Pro Ala Ser Ala
35 40 45
Ser Ile Val Tyr Gly Ser His Pro Ala Pro Ser Thr Phe Phe Leu Glu
50 55 60
Pro Lys Glu Ile Gln Gln Asn Leu Val Leu Lys Ser Gly Glu Gln Val
65 70 75 80
Ile Thr Cys Ser Lys His Arg Tyr Lys Ile Pro Leu Asp Tyr Phe Gly
85 90 95
Leu Val Gln Thr Lys Gly Thr Leu Ala Arg Leu Phe Val Gln Val Thr
100 105 110
Cys Asn Asp Gly Gln Val Glu Pro Gly Phe Asp Gly Tyr Val Thr Leu
115 120 125
Glu Ile Val Asn Met Ser Pro Trp Thr Ile Glu Ile Pro Ala Val Ser
130 135 140
Asp Ile Ala Gln Leu Tyr Leu Val Lys Cys Ser Thr Ser Ala Ser Glu
145 150 155 160
Pro Tyr His Gly Arg Tyr Met Asp Ala Ala Lys Lys Gly Pro Thr Leu
165 170 175
Ala Val Phe Arg Lys
180

<210> 240

<211> 765

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 240

aggacaatgg	cagggtggcc	gcgtctcgca	gccaaggac	gaaggacaaa	tctgatgagt	60
gtgttacaga	tcaaagggcg	tacaacgaaa	tcccacacgg	attttgacgc	ggcatcgtac	120
tccagcaaca	gccttatact	cactgatgca	ggggacgaga	gaattgaaga	gttttccctc	180
gaattgtccg	tgggtgaagg	gtggagtgat	aactattctg	gcaacgacaa	aaacctgtgg	240
cgcattgtcg	atggtatgac	gatcaggggt	cacgattctg	ttgtggtgga	ggccgctgaa	300
gaaatcaagg	tgccgcacaa	tcggtacggc	atagtcctac	ctacgggaag	tctttttctc	360
tcacgcggcg	tgctggttgc	ttcggcgaag	gtcgaacctg	catttgatgg	caagctcaag	420
ctcaggatat	tcaacaccac	caacaaaaat	gtctgcctta	ccaaaggcga	gaagcttggc	480
tctgtgattt	ttttctccac	agaatcgacg	cacacccaaa	gccccatcaa	gcggtggcagt	540
gaaatatcga	cgcttcccat	cacgcggcgc	gcgcgattga	agaagtgggt	ttcgctcaat	600
cccaccatat	gggtcgggtg	gacgctgaat	ttaatcgga	gttccctggt	gtcttctctt	660
ataatgtacg	ccgtctatta	caaggttgtg	ctggaacacc	agtcgcagcc	tcctcagtca	720
caacaaaacg	ctcagccatc	gccgaacgaa	gttaagccaa	aatga		765

<210> 241

<211> 254

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 241

Arg Thr Met Ala Gly Trp Pro Arg Leu Ala Ala Gln Gly Arg Arg Thr
1 5 10 15
Asn Leu Met Ser Val Leu Gln Ile Lys Gly Arg Thr Thr Lys Ser His
20 25 30
Thr Asp Phe Asp Ala Ala Ser Tyr Ser Ser Asn Ser Leu Ile Leu Thr
35 40 45
Asp Ala Gly Asp Glu Arg Ile Glu Glu Phe Ser Leu Glu Leu Ser Val

Ala Glu Ala Thr Ser Thr Pro Arg Glu Arg Lys Arg Leu Pro Val Gly
 100 105 110
 Arg Thr Met Pro Tyr Arg Leu Cys Gly Thr Leu Ile Ser Ser Ala Ala
 115 120 125
 Ser Thr Thr Thr Glu Ser
 130

<210> 244
 <211> 501
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 244
 tctgtaaacac actcatcaga tttgtccttc gtccttgggc tgcgagacgc ggccaccctg 60
 ccattgtcct ttataaccggc cgatatcccc ggataccgcc tgaaagatga cgtgcgcaaa 120
 gcgtgcacca atctgaattt caaacgcctc gctgtgattg ttggtgagcg cgaacgcat 180
 cggccctaca taacctggag gcagcacact ggaactgaac gttatcccgc ttctgaacag 240
 cgtgcttctc ggaaaaaaaa gcgccgccag atcttccggc agatcgaatt cttccatggt 300
 gctcgccaga taagtcttgc ccggttccat gacgaagcag tcatccgggt ctgcgagcac 360
 gacctcgctg gcaggggtgc gtcgcgtaga ttctcgcaag cttccacccc ctactgtcag 420
 gcgagagagg cctgcgagtc tgaggtcaaa tccaacgcct tccgggggtgg tcaactcacg 480
 gtgggcaagg tgcttgatta g 501

<210> 245
 <211> 166
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 245
 Ser Val Thr His Ser Ser Asp Leu Ser Phe Val Leu Gly Leu Arg Asp
 1 5 10 15
 Ala Ala Thr Leu Pro Leu Ser Phe Ile Pro Ala Asp Ile Pro Gly Tyr
 20 25 30
 Arg Leu Lys Asp Asp Val Arg Lys Ala Cys Thr Asn Leu Asn Phe Lys
 35 40 45
 Arg Leu Ala Val Ile Val Gly Glu Arg Glu Arg His Arg Pro Tyr Ile
 50 55 60
 Thr Trp Arg Gln His Thr Gly Thr Glu Arg Tyr Pro Ala Ser Glu Gln
 65 70 75 80
 Arg Ala Ser Arg Lys Lys Lys Arg Arg Gln Ile Phe Arg Gln Ile Glu
 85 90 95
 Phe Phe His Gly Ala Arg Gln Ile Ser Leu Ala Arg Phe His Asp Glu
 100 105 110
 Ala Val Ile Arg Val Cys Glu His Asp Leu Ala Gly Arg Gly Ala Ser
 115 120 125
 Arg Arg Phe Ser Gln Ala Ser Thr Pro Tyr Cys Gln Ala Arg Glu Ala
 130 135 140
 Cys Glu Ser Glu Val Lys Ser Asn Ala Phe Arg Gly Gly Gln Leu Thr
 145 150 155 160
 Val Gly Lys Val Leu Asp
 165

<210> 246
 <211> 534
 <212> DNA
 <213> Pseudomonas aeruginosa

```

<400> 246
atgattttact caccgcactc gtccttga aa ctgggtccggg atggaaaact aatcaagcac      60
cttggcccacc gtgagttgac caccgccgaa ggcgttggat ttgacctcag actcgcaggc      120
ctctctcgcc tgacagtagg ggggtggaagc ttgcgagaat ctacgcgacg cacccttgcc      180
agcgaggtcg tgctcgcaga cccggatgac tgcttcgtca tggaaaccggg caagacttat      240
ctggcgagca ccatggaaga attcgatctg ccggaagatc tggcggcgct tttttttccg      300
agaagcacgc tgttcagaag cgggataacg ttcagttcca gtgtgctgcc tccaggttat      360
gtagggccga tgacgttcgc gctcaccaac aatcacagcg aggcgtttga aattcagatt      420
ggtgcacgct ttgcgcacgt catctttcag gcggtatccg gggatatcgg ccggtataaa      480
ggacaatggc aggggtggccg cgtctcgcag cccaaggacg aaggacaaat ctga      534

```

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<210> 247
<211> 177
<212> PRT
<213> Pseudomonas aeruginosa

```

```

<400> 247
Met Ile Tyr Ser Pro His Ser Leu Leu Lys Leu Val Arg Asp Gly Lys
1      5      10      15
Leu Ile Lys His Leu Ala His Arg Glu Leu Thr Thr Pro Glu Gly Val
20     25     30
Gly Phe Asp Leu Arg Leu Ala Gly Leu Ser Arg Leu Thr Val Gly Gly
35     40     45
Gly Ser Leu Arg Glu Ser Thr Arg Arg Thr Pro Ala Ser Glu Val Val
50     55     60
Leu Ala Asp Pro Asp Asp Cys Phe Val Met Glu Pro Gly Lys Thr Tyr
65     70     75     80
Leu Ala Ser Thr Met Glu Glu Phe Asp Leu Pro Glu Asp Leu Ala Ala
85     90     95
Leu Phe Phe Pro Arg Ser Thr Leu Phe Arg Ser Gly Ile Thr Phe Ser
100    105    110
Ser Ser Val Leu Pro Pro Gly Tyr Val Gly Pro Met Thr Phe Ala Leu
115    120    125
Thr Asn Asn His Ser Glu Ala Phe Glu Ile Gln Ile Gly Ala Arg Phe
130    135    140
Ala His Val Ile Phe Gln Ala Val Ser Gly Asp Ile Gly Arg Tyr Lys
145    150    155    160
Gly Gln Trp Gln Gly Gly Arg Val Ser Gln Pro Lys Asp Glu Gly Gln
165    170    175
Ile

```

```

<210> 248
<211> 345
<212> DNA
<213> Pseudomonas aeruginosa

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```

<400> 248
tgggcgtttct ctgcctgtcg cctcttttggc atgactggtc aagtcggatg caaacgggtgg      60
tcagcaccaa tgcaattggg tggatcatgt cgatgcaatt acgcagttga gcctggccca      120
gttctctccca agcaaagcat aagaccaaga tggcacattg ccaacaaaat acccttcccc      180
gctaccgttg ttttatcggt gttgccagcc ctgatctggc ggaaaagccc gctccatgaa      240
tcgtcatgga gcctcccatg tttcaactcc tttcctggat atccaggaag ccgtcccca      300
ccccaacaac caaagctgcc ccagggggat tcatccttcc tctga      345

```

```

<210> 249
<211> 114
<212> PRT

```


<213> Pseudomonas aeruginosa

<400> 249

```
Trp Pro Phe Ser Ala Cys Arg Leu Phe Gly Met Thr Gly Gln Val Gly
 1          5          10          15
Cys Lys Arg Trp Ser Ala Pro Met Gln Leu Gly Gly His Val Arg Cys
          20          25          30
Asn Tyr Ala Val Glu Pro Gly Pro Val Pro Pro Lys Gln Ser Ile Arg
          35          40          45
Pro Arg Trp His Ile Ala Asn Lys Ile Pro Phe Pro Ala Thr Val Val
          50          55          60
Leu Ser Leu Leu Pro Ala Leu Ile Trp Arg Lys Ser Pro Leu His Glu
65          70          75          80
Ser Ser Trp Ser Leu Pro Cys Phe Asn Ser Phe Pro Gly Tyr Pro Gly
          85          90          95
Ser Arg Pro Pro Pro Gln Gln Pro Lys Leu Pro Gln Gly Asp Ser Ser
          100          105          110
Phe Leu
```

<210> 250

<211> 414

<212> DNA

<213> Pseudomonas aeruginosa

<400> 250

```
tctggcggaa aagcccgctc catgaatcgt catggagcct cccatgtttc aactcctttc      60
ctggatatcc aggaagccgt cccccacccc aacaaccaa gctgccccag ggggattcat      120
ccttcctctg agcagcatgg aactgctcgg cagcctcgc cgccggcagc tactggagaa      180
catctggcag cgcgctcgc tatccaagca gcaattcgag gagatctacc ggcggccact      240
ggccaactat gccgagctgg tccagcagct ccctgcttcg gaaaatcatc accatgcca      300
tccaggcggg atgatcgatc acggcctgga gatcgtggcc tacgcactca aggtacggca      360
gacctacctg ctcccgatcg gcgcagcgcc ggagtcacag tcagcccagg ctga          414
```

<210> 251

<211> 137

<212> PRT

<213> Pseudomonas aeruginosa

<400> 251

```
Ser Gly Gly Lys Ala Arg Ser Met Asn Arg His Gly Ala Ser His Val
 1          5          10          15
Ser Thr Pro Phe Leu Asp Ile Gln Glu Ala Val Pro His Pro Asn Asn
          20          25          30
Gln Ser Cys Pro Arg Gly Ile His Pro Ser Ser Glu Gln His Gly Thr
          35          40          45
Ala Arg His Ala Ser Pro Pro Ala Ala Thr Gly Glu His Leu Ala Ala
          50          55          60
Arg Leu Ala Ile Gln Ala Ala Ile Arg Gly Asp Leu Pro Ala Ala Thr
65          70          75          80
Gly Gln Leu Cys Arg Ala Gly Pro Ala Ala Pro Cys Phe Gly Lys Ser
          85          90          95
Ser Pro Cys Pro Ser Arg Arg Asp Asp Arg Ser Arg Pro Gly Asp Arg
          100          105          110
Gly Leu Arg Thr Gln Gly Thr Ala Asp Leu Pro Ala Pro Asp Arg Arg
          115          120          125
Ser Ala Gly Val Thr Val Ser Pro Gly
          130          135
```

<210> 252
 <211> 1938
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 252
 atcgtcatgg agcctcccat gtttcaactc ctttcctgga tatccaggaa gccgtccccc 60
 accccaacaa ccaaagctgc cccaggggga ttcatacctc ctctgagcag catggaactg 120
 ctcggcacgc ctcgccgccg gcagctactg gagaacatct ggcagcgcg ctcgctatcc 180
 aagcagcaat tcgaggagat ctaccggcgg ccaactggcca actatgccga gctgggtccag 240
 cagctccctg cttcggaata tcatcaccat gcccataccag gcgggatgat cgatcacggc 300
 ctggagatcg tggcctacgc actcaaggta cggcagacct acctgctccc gatcggcgca 360
 gcgccggagt cacagtcagc ccaggctgaa gcctggtcgg ccgccgcggc gtatggcgcc 420
 ctgggtcatg acataggcaa gatcgtcgtc gacctgcagg ttgagctaca ggacggcagc 480
 acctggcacc cttggaacgg accgatcaac cagccatacc gcttcaagta cgtgaagtcc 540
 cgcgaatacc agctccacgg cgctgcctca gcactttctca tccaccaact gctaccgcgc 600
 actgcactcg attggctcag tcgctttcca gagctgtggg ctcaattgat ctacctgttc 660
 gctgggcagt acgagcacgc cgggatcctc ggcgagatca tcgtgaaggc agaccaggcc 720
 tcagttgcac aggagctagg aggcaatccg gatcgagctc tggctgcacc gaagcagtcg 780
 ctgcagcggc agttggcaga cggccttcgc ttcttgggtga aggacaagtt caagttgaat 840
 caacctagcg gcccgctctga tggatggctg acccaggacg cactctgggt ggtgagcaag 900
 cctgctgccg atcaactgag agcctacctg ctggcccagg gtatcgatgg ggtgccctcc 960
 tctaacgcgc cgttcttcag catgctccag gaccaagccg tcatccagac aaatgccgag 1020
 gacaaggcca tttggacggc cacggtagac aacggtgctg gatggagaaa caagttcacg 1080
 ctactcaaga ttgctccagc cttgatctgg acagatgctg ccgagcgccc ctcaccctac 1140
 agcggatcac tggtcggtga agatggaacc gcctcaacgg aaaagccgga aacgacctgt 1200
 gaaattccca acgggcccgc tgaacagcag caagcaccag aaacgaagat gatgctccat 1260
 caacctgcgc cgagcgttgc gaaaccggca aacgagacgc aggcgattgc gaaaccctca 1320
 actgatgatc aagaagaaac agacgatttg tatgcacttc ttggtaatat caattcgcca 1380
 ctagaagagc tagacactag ccacgactcg ccggctgcct ctctacgaa cacacgcggg 1440
 gaggagaacc tacagcagcc actagggacc aaggagccaa cagattgcgc tcctgaagca 1500
 attgaagatg tatttatgcc tagcagaagt actgatctgg gacagggatt cgttggttgg 1560
 atgaaatctg gcacgcgggc ccgtcgctg ttcataacg acaccaaggc tttggtgcat 1620
 accgtagacg ggaccgccat gctggtcacg ccaggaattt tcaagcgcta tgtccaagag 1680
 catccggtgc ttgaaaaact ggccaagcc aaggagacga ccggtcgtaa gctggtgcag 1740
 cgcgcttcg aaaaacaggg gcttcactcg aagaccagta aaaacctgaa catctggacc 1800
 atcaaggttt ctggtcctcg caagacgaaa gagctcaagg cctacctgct ccaggatccc 1860
 aaattgctgt tccttgagca gcctctggac aaccaagcc tcacggtcat caccgatgcc 1920
 gaaggaggtg tggaatga 1938

<210> 253
 <211> 645
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 253
 Ile Val Met Glu Pro Pro Met Phe Gln Leu Leu Ser Trp Ile Ser Arg
 1 5 10 15
 Lys Pro Ser Pro Thr Pro Thr Thr Lys Ala Ala Pro Gly Gly Phe Ile
 20 25 30
 Leu Pro Leu Ser Ser Met Glu Leu Leu Gly Thr Pro Arg Arg Arg Gln
 35 40 45
 Leu Leu Glu Asn Ile Trp Gln Arg Ala Ser Leu Ser Lys Gln Gln Phe
 50 55 60
 Glu Glu Ile Tyr Arg Arg Pro Leu Ala Asn Tyr Ala Glu Leu Val Gln
 65 70 75 80
 Gln Leu Pro Ala Ser Glu Asn His His His Ala His Pro Gly Gly Met
 85 90 95

Ile	Asp	His	Gly	Leu	Glu	Ile	Val	Ala	Tyr	Ala	Leu	Lys	Val	Arg	Gln
			100					105					110		
Thr	Tyr	Leu	Leu	Pro	Ile	Gly	Ala	Ala	Pro	Glu	Ser	Gln	Ser	Ala	Gln
		115					120					125			
Ala	Glu	Ala	Trp	Ser	Ala	Ala	Ala	Ala	Tyr	Gly	Ala	Leu	Ala	His	Asp
		130				135					140				
Ile	Gly	Lys	Ile	Val	Val	Asp	Leu	Gln	Val	Glu	Leu	Gln	Asp	Gly	Ser
145					150					155					160
Thr	Trp	His	Pro	Trp	Asn	Gly	Pro	Ile	Asn	Gln	Pro	Tyr	Arg	Phe	Lys
			165						170					175	
Tyr	Val	Lys	Ser	Arg	Glu	Tyr	Gln	Leu	His	Gly	Ala	Ala	Ser	Ala	Leu
			180					185					190		
Leu	Ile	His	Gln	Leu	Leu	Pro	Arg	Thr	Ala	Leu	Asp	Trp	Leu	Ser	Arg
		195					200					205			
Phe	Pro	Glu	Leu	Trp	Ala	Gln	Leu	Ile	Tyr	Leu	Phe	Ala	Gly	Gln	Tyr
		210				215					220				
Glu	His	Ala	Gly	Ile	Leu	Gly	Glu	Ile	Ile	Val	Lys	Ala	Asp	Gln	Ala
225					230					235					240
Ser	Val	Ala	Gln	Glu	Leu	Gly	Gly	Asn	Pro	Asp	Arg	Ala	Leu	Ala	Ala
			245						250					255	
Pro	Lys	Gln	Ser	Leu	Gln	Arg	Gln	Leu	Ala	Asp	Gly	Leu	Arg	Phe	Leu
			260					265					270		
Val	Lys	Asp	Lys	Phe	Lys	Leu	Asn	Gln	Pro	Ser	Gly	Pro	Ser	Asp	Gly
		275					280					285			
Trp	Leu	Thr	Gln	Asp	Ala	Leu	Trp	Leu	Val	Ser	Lys	Pro	Ala	Ala	Asp
	290					295					300				
Gln	Leu	Arg	Ala	Tyr	Leu	Leu	Ala	Gln	Gly	Ile	Asp	Gly	Val	Pro	Ser
305					310					315					320
Ser	Asn	Ala	Pro	Phe	Phe	Ser	Met	Leu	Gln	Asp	Gln	Ala	Val	Ile	Gln
			325						330					335	
Thr	Asn	Ala	Glu	Asp	Lys	Ala	Ile	Trp	Thr	Ala	Thr	Val	Asp	Asn	Gly
			340					345					350		
Ala	Gly	Trp	Arg	Asn	Lys	Phe	Thr	Leu	Leu	Lys	Ile	Ala	Pro	Ala	Leu
		355					360					365			
Ile	Trp	Thr	Asp	Ala	Ala	Glu	Arg	Pro	Ser	Pro	Tyr	Ser	Gly	Ser	Leu
	370					375					380				
Val	Val	Glu	Asp	Gly	Thr	Ala	Ser	Thr	Glu	Lys	Pro	Glu	Thr	Thr	Cys
385					390					395					400
Glu	Ile	Pro	Asn	Gly	Pro	Ala	Glu	Gln	Gln	Gln	Ala	Pro	Glu	Thr	Lys
			405						410					415	
Met	Met	Leu	His	Gln	Pro	Ala	Pro	Ser	Val	Ala	Lys	Pro	Ala	Asn	Glu
			420					425					430		
Thr	Gln	Ala	Ile	Ala	Lys	Pro	Ser	Thr	Asp	Asp	Gln	Glu	Glu	Thr	Asp
		435					440					445			
Asp	Leu	Tyr	Ala	Leu	Leu	Gly	Asn	Ile	Asn	Ser	Pro	Leu	Glu	Glu	Leu
		450				455					460				
Asp	Thr	Ser	His	Asp	Ser	Pro	Ala	Ala	Ser	Pro	Thr	Asn	Thr	Arg	Gly
465					470					475					480
Glu	Glu	Asn	Leu	Gln	Gln	Pro	Leu	Gly	Thr	Lys	Glu	Pro	Thr	Asp	Cys
			485						490					495	
Ala	Pro	Glu	Ala	Ile	Glu	Asp	Val	Phe	Met	Pro	Ser	Arg	Ser	Thr	Asp
			500					505					510		
Leu	Gly	Gln	Gly	Phe	Val	Gly	Trp	Met	Lys	Ser	Gly	Ile	Ala	Ala	Arg
		515					520					525			
Arg	Leu	Phe	Ile	Asn	Asp	Thr	Lys	Ala	Leu	Val	His	Thr	Val	Asp	Gly
		530				535					540				
Thr	Ala	Met	Leu	Val	Thr	Pro	Gly	Ile	Phe	Lys	Arg	Tyr	Val	Gln	Glu
545					550					555					560
His	Pro	Val	Leu	Glu	Lys	Leu	Ala	Gln	Ala	Lys	Glu	Thr	Thr	Gly	Trp


```

ggagggcacc ccacgatac cctgggccag caggtaggct ctcagttgat cggcagcagg 180
cttgctcacc agccagagtg cgctcctgggt cagccatcca tcagacgggc cgctagggtg 240
attcaacttg aacttgctct tcaccaagaa gcgaaggccg tctgccaact gccgctgcag 300
cgactgcttc ggtgcagcca gagctcgatc cggattgcct cctag 345

```

<210> 257
 <211> 114
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 257
Arg Glu Leu Val Ser Pro Ser Ser Thr Val Val Tyr Arg Gly Arg Pro
1      5      10      15
Asn Gly Leu Val Leu Gly Ile Cys Leu Asp Asp Gly Leu Val Leu Glu
20     25     30
His Ala Glu Glu Arg Arg Val Arg Gly Gly His Pro Ile Asp Thr Leu
35     40     45
Gly Gln Gln Val Gly Ser Gln Leu Ile Gly Ser Arg Leu Ala His Gln
50     55     60
Pro Glu Cys Val Leu Gly Gln Pro Ser Ile Arg Arg Ala Ala Arg Leu
65     70     75     80
Ile Gln Leu Glu Leu Val Leu His Gln Glu Ala Lys Ala Val Cys Gln
85     90     95
Leu Pro Leu Gln Arg Leu Leu Arg Cys Ser Gln Ser Ser Ile Arg Ile
100    105    110
Ala Ser

```

<210> 258
 <211> 339
 <212> DNA
 <213> *Pseudomonas aeruginosa*

```

<400> 258
cgcttgaaaa ttcttgccgt gaccagcatg gcggtcccgct ctacgggtatg caccaaagcc 60
ttggtgtcgt tgatgaacag gcgacgggcc gcgatgccag atttcatcca accaacgaat 120
ccctgtccca gatcagtact tctgctaggc ataaatacat cttcaattgc ttcaggagcg 180
caatctgttg gctccttggc ccctagtggc tgctgtaggt tctcctcccc gcgtgtgttc 240
gtaggagagg cagccggcga gtcgtggcta gtgtctagct cttctagtgg cgaattgata 300
ttaccaagaa gtgcatacaa atcgtctgtt tcttcttga 339

```

<210> 259
 <211> 112
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 259
Arg Leu Lys Ile Pro Gly Val Thr Ser Met Ala Val Pro Ser Thr Val
1      5      10      15
Cys Thr Lys Ala Leu Val Ser Leu Met Asn Arg Arg Arg Ala Ala Met
20     25     30
Pro Asp Phe Ile Gln Pro Thr Asn Pro Cys Pro Arg Ser Val Leu Leu
35     40     45
Leu Gly Ile Asn Thr Ser Ser Ile Ala Ser Gly Ala Gln Ser Val Gly
50     55     60
Ser Leu Val Pro Ser Gly Cys Cys Arg Phe Ser Ser Pro Arg Val Phe
65     70     75     80
Val Gly Glu Ala Ala Gly Glu Ser Trp Leu Val Ser Ser Ser Ser Ser

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				85						90					95				
Gly	Glu	Leu	Ile	Leu	Pro	Arg	Ser	Ala	Tyr	Lys	Ser	Ser	Val	Ser	Ser				
			100					105					110						

<210> 260
 <211> 489
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 260

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gtccagaggc	tgctcagga	acagcaattt	gggatcctgg	agcaggtagg	ccttgagctc	120
tttcgtcttg	cgaggaccag	aaaccttgat	gggtccagatg	ttcaggtttt	tactgggtctt	180
ccgatgaagc	ccctgttttt	cgaacgcgcg	ctgcaccagc	ttccagccgg	tcgtctcctt	240
ggcttggg	agtttttcaa	gcaccggatg	ctcttggaca	tagcgcttga	aaattcctgg	300
cgtagaccagc	atggcgggtcc	cgtctacggt	atgcaccaaa	gccttgggtgt	cgttgatgaa	360
caggcgcacgg	gccgcgatgc	cagatttcat	ccaaccaacg	aatccctgtc	ccagatcagt	420
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gtccctag						489

<210> 261
 <211> 162
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 261

Ala	Ala	Ala	Ala	Ser	Phe	His	Thr	Ser	Phe	Gly	Ile	Gly	Asp	Asp	Arg
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Glu	Ala	Trp	Val	Val	Gln	Arg	Leu	Leu	Arg	Glu	Gln	Gln	Phe	Gly	Ile
			20					25					30		
Leu	Glu	Gln	Val	Gly	Leu	Glu	Leu	Phe	Arg	Leu	Ala	Arg	Thr	Arg	Asn
			35				40					45			
Leu	Asp	Gly	Pro	Asp	Val	Gln	Val	Phe	Thr	Gly	Leu	Pro	Met	Lys	Pro
	50				55					60					
Leu	Phe	Phe	Glu	Arg	Ala	Leu	His	Gln	Leu	Pro	Ala	Gly	Arg	Leu	Leu
65					70				75						80
Gly	Leu	Gly	Gln	Phe	Phe	Lys	His	Arg	Met	Leu	Leu	Asp	Ile	Ala	Leu
				85				90						95	
Glu	Asn	Ser	Trp	Arg	Asp	Gln	His	Gly	Gly	Pro	Val	Tyr	Gly	Met	His
			100					105					110		
Gln	Ser	Leu	Gly	Val	Val	Asp	Glu	Gln	Ala	Thr	Gly	Arg	Asp	Ala	Arg
		115				120					125				
Phe	His	Pro	Thr	Asn	Glu	Ser	Leu	Ser	Gln	Ile	Ser	Thr	Ser	Ala	Arg
	130					135					140				
His	Lys	Tyr	Ile	Phe	Asn	Cys	Phe	Arg	Ser	Ala	Ile	Cys	Trp	Leu	Leu
145					150					155					160
Gly	Pro														

<210> 262
 <211> 396
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 262

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tccaggatcc	caaattgctg	ttccctgagc	agcctctgga	caaccaagc	ctcacggtca	120

tcaccgatgc	cgaaggaggt	gtggaatgac	gccgcagcag	ctcaccgagg	agtacatctt	180
cgcgccacgat	ctccgggaag	ccagcgcgaa	gatctaccgc	gccgcgacca	aggcgctgct	240
caagcacttc	ggctctacgg	caaccgtaca	ggacgtggac	caccgggctg	tcctgggatg	300
gcgacgcaag	gtactgggaa	aaggcctgtc	caagcggagc	tggaacacgt	actcgaatca	360
tctgcggacg	atctggggct	atgccatcga	gcatga			396

<210> 263
 <211> 131
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 263

Thr	Ser	Gly	Pro	Ser	Arg	Phe	Leu	Val	Leu	Ala	Arg	Arg	Lys	Ser	Ser
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Arg	Pro	Thr	Cys	Ser	Arg	Ile	Pro	Asn	Cys	Cys	Ser	Leu	Ser	Ser	Leu
			20					25					30		
Trp	Thr	Thr	Gln	Ala	Ser	Arg	Ser	Ser	Pro	Met	Pro	Lys	Glu	Val	Trp
		35					40					45			
Asn	Asp	Ala	Ala	Ala	Ala	His	Arg	Gly	Val	His	Leu	Arg	Ala	Arg	Ser
	50					55					60				
Pro	Gly	Ser	Gln	Arg	Glu	Asp	Leu	Pro	Arg	Arg	Asp	Gln	Gly	Ala	Ala
65					70					75					80
Gln	Ala	Leu	Arg	Ser	Tyr	Gly	Asn	Arg	Thr	Gly	Arg	Gly	Pro	Pro	Gly
				85					90					95	
Cys	Pro	Gly	Met	Ala	Thr	Gln	Gly	Thr	Gly	Thr	Arg	Pro	Val	Gln	Ala
			100					105					110		
Glu	Leu	Glu	His	Val	Leu	Glu	Ser	Ser	Ala	Asp	Asp	Leu	Gly	Leu	Cys
		115					120					125			
His	Arg	Ala													
		130													

<210> 264
 <211> 690
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 264

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gccgcgggatg	aggatcagtt	gattttccca	gtcgatgtcg	cgcttgcgga	tgcacaacag	120
cgcatccaac	cggatgccgg	tgaagtagaa	gacctcaaac	gtgcaaagcc	agaaccaggc	180
gggcgtgatc	cgtgcgcgtt	cgccggtgca	gcgctctgcy	ccgtcctgca	tggtgagcca	240
attgcggggcg	agcaggatgg	cttcggcggc	gacggttttg	cttgctcgcc	tgggggggaat	300
gacggtgggtc	tttctgaacg	ggttgacttg	ggagtgcgtc	accaaactcat	gctcgaatggc	360
atagccccag	atcgtccgca	gatgattcga	gtacgtgttc	cagctccgct	tggacaggcc	420
ttgttccagt	accttgcgtc	gccatcccag	gacagcccgg	tgggccacgt	cctgtacggg	480
tgccgtagga	ccgaagtgtc	tgagcagcgc	cttggtcgcg	gcgcggtaga	tcttcgcgct	540
ggcttcccgg	agatcgtgcy	cgaagatgta	ctcctcgggt	agctgctgcy	gcgtcattcc	600
acacctcctt	cggcatcggt	gatgaccgtg	aggcttgggt	tgtccagagg	ctgctcaggg	660
aacagcaatt	tgggatcctg	gagcaggtag				690

<210> 265
 <211> 229
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 265

Val	Arg	His	Lys	Pro	Leu	Arg	Tyr	Trp	His	Tyr	Glu	Leu	Phe	Val	Ser
1				5					10					15	

Leu Leu Cys Leu Ala Ala Asp Glu Asp Gln Leu Ile Phe Pro Val Asp
 20 25 30
 Val Ala Leu Ala Asp Ala Gln Gln Arg Ile Gln Pro Asp Ala Gly Glu
 35 40 45
 Val Glu Asp Leu Lys Arg Ala Lys Pro Glu Pro Gly Gly Arg Asp Pro
 50 55 60
 Cys Ala Phe Ala Gly Ala Ala Leu Cys Ala Val Leu His Val Glu Pro
 65 70 75 80
 Ile Ala Gly Glu Gln Asp Gly Phe Gly Gly Asp Gly Phe Ala Cys Ser
 85 90 95
 Pro Gly Gly Asn Asp Gly Gly Leu Ser Glu Arg Val Asp Leu Gly Val
 100 105 110
 Arg His Gln Leu Met Leu Asp Gly Ile Ala Pro Asp Arg Pro Gln Met
 115 120 125
 Ile Arg Val Arg Val Pro Ala Pro Leu Gly Gln Ala Leu Phe Gln Tyr
 130 135 140
 Leu Ala Ser Pro Ser Gln Asp Ser Pro Val Val His Val Leu Tyr Gly
 145 150 155 160
 Cys Arg Arg Thr Glu Val Leu Glu Gln Arg Leu Gly Arg Gly Ala Val
 165 170 175
 Asp Leu Arg Ala Gly Phe Pro Glu Ile Val Arg Glu Asp Val Leu Leu
 180 185 190
 Gly Glu Leu Leu Arg Arg His Ser Thr Pro Pro Ser Ala Ser Val Met
 195 200 205
 Thr Val Arg Leu Gly Leu Ser Arg Gly Cys Ser Gly Asn Ser Asn Leu
 210 215 220
 Gly Ser Trp Ser Arg
 225

<210> 266
 <211> 1341
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 266
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 acgccgcagc agctcaccca ggagtacatc ttccgcgcacg atctccggga agccagcgcg 120
 aagatctacc gcgccgcgac caaggcgctg ctcaagcact tcggctctac ggcaaccgta 180
 caggacgtgg accaccgggc tgccttgga tggcgacgca aggtactgga acaaggcctg 240
 tccaagcgga gctggaacac gtactcgaat catctgcgga cgatctgggg ctatgccatc 300
 gagcatgagt tggtagcgca ctcccaagtc aaccgcgttc gaaagaccac cgtcattccc 360
 cccaggcgag caagcaaaac cgtcgccgcc gaagccatcc tgctcgccc caattggctc 420
 aacatgcagg acggcgcgaga gcgtgcacc ggcgaacgcg cacggatcac gcccgcttg 480
 ttctggcttt gcacgtttga ggtcttctac ttaccggca tccggttgaa tgcgctgttg 540
 tgcattccgca agcgcgacat cgactgggaa aatcaactga tctcatccg cggcgagaca 600
 gagaagactc acaaagagtt cgtagtcca ataacggagg ggcttggtgc tcacctatcg 660
 aggctcctgc aagaggccga tagagccgga ttccgccgatg acgaccaggt gttcaacgtc 720
 aaccggttct caccgcacta caagagcaag gtgatgaact ccgaccaggt cgaagccatg 780
 taccggaagt tgaccgagaa ggttggggtg cggatgacct cgcaccgttt ccggcacacc 840
 ctggccaccg acttgatgaa ggcacccgag cgggaacatt acctcacgaa gtgcctgctc 900
 aaccactcga atatccagac cacgatgagc tacatcgagg ccgactacga tcacatgcgt 960
 gccgtgctgc atgctagaag cctggcccaa ggccgcgctg agaatgtcag gaagggtgat 1020
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 gtgagtgaag cgccgccacc ggaggccagg acagagcctg cagaaccaag ggagcacacg 1140
 ccaggacag gcattcaggg aggtccaacc gcgtgggaag cagatgcgct accacagcca 1200
 cctgacacct tcgaaccaag cgtgctgttc actctgatgg ctcaaaactt atcgaaccgt 1260
 gccgcctcgg catccgcggc tcccgtgca acaagcggat caggcggatg gggatctgcc 1320
 gccgaagca atctcgcta g 1341

<210> 267
 <211> 446
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 267
 Ala Ala Ser Gly Gln Pro Lys Pro His Gly His His Arg Cys Arg Arg
 1 5 10 15
 Arg Cys Gly Met Thr Pro Gln Gln Leu Thr Glu Glu Tyr Ile Phe Ala
 20 25 30
 His Asp Leu Arg Glu Ala Ser Ala Lys Ile Tyr Arg Ala Ala Thr Lys
 35 40 45
 Ala Leu Leu Lys His Phe Gly Pro Thr Ala Thr Val Gln Asp Val Asp
 50 55 60
 His Arg Ala Val Leu Gly Trp Arg Arg Lys Val Leu Glu Gln Gly Leu
 65 70 75 80
 Ser Lys Arg Ser Trp Asn Thr Tyr Ser Asn His Leu Arg Thr Ile Trp
 85 90 95
 Gly Tyr Ala Ile Glu His Glu Leu Val Thr His Ser Gln Val Asn Pro
 100 105 110
 Phe Arg Lys Thr Thr Val Ile Pro Pro Arg Arg Ala Ser Lys Thr Val
 115 120 125
 Ala Ala Glu Ala Ile Leu Leu Ala Arg Asn Trp Leu Asn Met Gln Asp
 130 135 140
 Gly Ala Glu Arg Cys Thr Gly Glu Arg Ala Arg Ile Thr Pro Ala Trp
 145 150 155 160
 Phe Trp Leu Cys Thr Phe Glu Val Phe Tyr Phe Thr Gly Ile Arg Leu
 165 170 175
 Asn Ala Leu Leu Cys Ile Arg Lys Arg Asp Ile Asp Trp Glu Asn Gln
 180 185 190
 Leu Ile Leu Ile Arg Gly Glu Thr Glu Lys Thr His Lys Glu Phe Val
 195 200 205
 Val Pro Ile Thr Glu Gly Leu Val Pro His Leu Ser Arg Leu Leu Gln
 210 215 220
 Glu Ala Asp Arg Ala Gly Phe Ala Asp Asp Asp Gln Leu Phe Asn Val
 225 230 235 240
 Asn Arg Phe Ser Pro His Tyr Lys Ser Lys Val Met Asn Ser Asp Gln
 245 250 255
 Val Glu Ala Met Tyr Arg Lys Leu Thr Glu Lys Val Gly Val Arg Met
 260 265 270
 Thr Pro His Arg Phe Arg His Thr Leu Ala Thr Asp Leu Met Lys Ala
 275 280 285
 Pro Glu Arg Asn Ile His Leu Thr Lys Cys Leu Leu Asn His Ser Asn
 290 295 300
 Ile Gln Thr Thr Met Ser Tyr Ile Glu Ala Asp Tyr Asp His Met Arg
 305 310 315 320
 Ala Val Leu His Ala Arg Ser Leu Ala Gln Gly Ala Leu Glu Asn Val
 325 330 335
 Arg Lys Val Asp Tyr Ser Gly Ser Pro Gln Ala Ser Ala Lys Pro Lys
 340 345 350
 Pro Cys Gly Gln Pro Leu Ala Arg Val Ser Glu Ala Pro Pro Pro Glu
 355 360 365
 Ala Arg Thr Glu Pro Ala Glu Pro Arg Glu His Thr Pro Gly Thr Gly
 370 375 380
 Ile Gln Gly Gly Pro Thr Ala Trp Glu Ala Asp Ala Leu Pro Gln Pro
 385 390 395 400
 Pro Asp Thr Phe Glu Pro Ser Val Leu Phe Thr Leu Met Ala Gln Asn
 405 410 415
 Leu Ser Asn Arg Ala Ala Ser Ala Ser Ala Ala Pro Ala Ala Thr Ser

		420					425				430		
Gly	Ser	Gly	Gly	Trp	Gly	Ser	Ala	Ala	Arg	Ser	Asn	Leu	Ala
		435					440					445	

<210> 268
 <211> 459
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 268																			
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ttgcccgcac	ggcttcgggt	tggcagaggc	ttgcggggag	ccgctgtaat	ccaccttcct														180
gacattctcc	agcgcgcctt	gggccaggct	tctagcatgc	agcacggcac	gcatgtgatc														240
gtagtcggcc	tcgatgtagc	tcatcgtggt	ctggatatcc	gagtgggtga	gcaggcactt														300
cgtgaggtga	atgttccgct	cgggtgcctt	catcaagtcg	gtggccaggg	tgtgccggaa														360
acggtgcggg	gtcatccgca	ccccaacctt	ctcggccaac	ttccggtaca	tggcttcgac														420
ctggctcgag	ttcatcacct	tgctcttgta	gtgcggtga																459

<210> 269
 <211> 152
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 269																			
Arg	Ile	Cys	Phe	Pro	Arg	Gly	Trp	Thr	Ser	Leu	Asn	Ala	Cys	Pro	Trp				
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Arg	Val	Leu	Pro	Trp	Phe	Cys	Arg	Leu	Cys	Pro	Gly	Leu	Arg	Trp	Arg				
			20					25					30						
Arg	Phe	Thr	His	Ser	Ser	Glu	Arg	Leu	Pro	Ala	Trp	Leu	Arg	Phe	Gly				
		35					40					45							
Arg	Gly	Leu	Arg	Gly	Ala	Ala	Val	Ile	His	Leu	Pro	Asp	Ile	Leu	Gln				
	50				55						60								
Arg	Ala	Leu	Gly	Gln	Ala	Ser	Ser	Met	Gln	His	Gly	Thr	His	Val	Ile				
65				70					75					80					
Val	Val	Gly	Leu	Asp	Val	Ala	His	Arg	Gly	Leu	Asp	Ile	Arg	Val	Val				
			85					90					95						
Glu	Gln	Ala	Leu	Arg	Glu	Val	Asn	Val	Pro	Leu	Gly	Cys	Leu	His	Gln				
		100					105					110							
Val	Gly	Gly	Gln	Gly	Val	Pro	Glu	Thr	Val	Arg	Gly	His	Pro	His	Pro				
	115				120				125										
Asn	Leu	Leu	Gly	Gln	Leu	Pro	Val	His	Gly	Phe	Asp	Leu	Val	Gly	Val				
	130				135						140								
His	His	Leu	Ala	Leu	Val	Val	Arg												
145					150														

<210> 270
 <211> 312
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 270																			
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ctcggcatcc	gcggctcccg	ctgcaacaag	cggatcaggc	ggatggggat	ctgccgcccg														120
aagcaatctc	gcctagcgat	accggtactg	agggccggct	accggacgaa	aggtagccgt														180
gccttcacgc	agatcgtagg	gcctgtagga	aaaatctgga	attaccgaga	gcgcctggat														240
tccagcgccg	gcatgctggc	agagccagcg	caatttcaag	gccaatacca	cagtaccctc														300

tgtaatcgct ga

312

<210> 271
<211> 103
<212> PRT
<213> Pseudomonas aeruginosa

<400> 271
His Leu Arg Thr Lys Arg Ala Val His Ser Asp Gly Ser Lys Leu Ile
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Glu Pro Cys Arg Leu Gly Ile Arg Gly Ser Arg Cys Asn Lys Arg Ile
20 25 30
Arg Arg Met Gly Ile Cys Arg Pro Lys Gln Ser Arg Leu Ala Ile Pro
35 40 45
Val Leu Arg Ala Gly Tyr Arg Thr Lys Gly Ser Arg Ala Phe Gln Gln
50 55 60
Ile Val Arg Pro Val Gly Lys Ile Trp Asn Tyr Arg Glu Arg Leu Asp
65 70 75 80
Ser Ser Ala Gly Met Leu Ala Glu Pro Ala Gln Phe Gln Gly Gln Tyr
85 90 95
His Ser Thr Leu Cys Asn Arg
100

<210> 272
<211> 2970
<212> DNA
<213> Pseudomonas aeruginosa

<400> 272
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catttgctct accgactgag ctatcgcgga acgtctttct tccaaccctg gacgcttccg 180
gtggtgctgg attcgctct cagaggcgcg ccattttacg gatgcgcgcg ggcattgtcaa 240
ccctctgatc caaaaagttt ttcttctttt tccacgagcg acaaaacggc ccttccactg 300
catgcggcag cgctctcgcg cctaccggac gcccatgaaa aagccccgcc gaagcggggc 360
tttccctgtc cgccccgaa gaggtcaggc gaagacgatc tcgtcgctt ccaccttcgc 420
cgagatactg gcacccggcg cgaatttgcc ggccaggatc agttgcgcca gcgggttctc 480
gatccagcgc tggatggccc gcttcagcgg gcgtgcgcca tagaccgggt cgaagccgac 540
ggcaatcagc ttgtccagcg cctcctggct cagttccagg ctacgctcgc gctcggccag 600
gcgcttgccg aggcgaccga gctggatctc ggcgatgccg gcgatctgct cgcgagccag 660
cggctcgaac accaccactt cgtcgatccg gttgatgaat tccggacgga agtgcgcatt 720
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cgccgaaccg aggttgagg tcatcaccac caggtgttg cggaagtcca ccgtacgccc 840
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caccccggtg	tgcacttcat	agcggttcct	gaggccacgg	aggatggcga	tggtgtcttc	1920
ctcgctcggt	tcgteccacca	gcaccttctg	gaagcggcgc	tccagcgcgg	catccttctc	1980
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catggtgtgc	agttcgtcga	tgaacaggat	gaccgcgcct	tcctgcttgc	ccagttcggt	2160
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gccgagcctg	gtgttctcgt	ccatcgcggc	cagcaatacc	agctcgctgg	agatgaactg	2640
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caggttcacg	tcgccggctg	ggctctggat	cttcggcagc	gcgtcgagtt	ctttgttgag	2760
gccgctgcgc	agggcggcga	tatcgaagcc	gacctgcata	agcagggggt	tgatcgaacc	2820
gccttgctgc	tcgagcaggg	cggaaagcag	gtgcaccggc	tcgatggccg	gatggtcatg	2880
gccaacggcc	agggactggg	cgtcggagag	cgccagttgc	agcttgctgg	tcaaacggtc	2940
tattcgcatg	ggtcgtcctt	ccttctatag				2970

<210> 273

<211> 989

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 273

Arg	Asp	Ser	Asn	Ser	Arg	His	Pro	Ala	Pro	Lys	Ala	Gly	Ala	Leu	Pro
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Asp	Cys	Ala	Ile	Pro	Arg	Leu	Glu	Phe	Gly	Ser	Ala	Thr	Trp	Thr	Arg
			20					25					30		
Thr	Arg	Asp	Pro	Met	Ile	Asn	Ser	His	Leu	Leu	Tyr	Arg	Leu	Ser	Tyr
		35					40					45			
Arg	Gly	Thr	Ser	Phe	Phe	Gln	Pro	Trp	Thr	Leu	Pro	Val	Leu	Leu	Asp
50						55					60				
Ser	Arg	Leu	Arg	Gly	Ala	Pro	Phe	Tyr	Gly	Cys	Ala	Arg	Ala	Cys	Gln
65					70					75				80	
Pro	Ser	Asp	Pro	Lys	Ser	Phe	Ser	Ser	Phe	Ser	Thr	Ser	Asp	Lys	Thr
				85					90					95	
Ala	Leu	Pro	Leu	His	Ala	Ala	Ala	Leu	Ser	Arg	Leu	Pro	Asp	Ala	His
			100					105					110		
Glu	Lys	Ala	Pro	Pro	Lys	Arg	Gly	Phe	Pro	Cys	Pro	Pro	Pro	Lys	Arg
	115						120					125			
Ser	Gly	Glu	Asp	Asp	Leu	Val	Ala	Phe	His	Leu	Arg	Arg	Asp	Thr	Gly
130						135					140				
Thr	Arg	Arg	Glu	Phe	Ala	Gly	Gln	Asp	Gln	Leu	Arg	Gln	Arg	Val	Leu
145					150					155					160
Asp	Pro	Ala	Leu	Asp	Gly	Pro	Leu	Gln	Arg	Ala	Cys	Ala	Ile	Asp	Arg
				165					170					175	
Val	Glu	Ala	Asp	Gly	Asn	Gln	Leu	Val	Gln	Arg	Leu	Leu	Ala	Gln	Phe
			180					185					190		
Gln	Ala	Gln	Leu	Ala	Leu	Gly	Gln	Ala	Leu	Ala	Gln	Ala	Thr	Glu	Leu
	195						200					205			
Asp	Leu	Gly	Asp	Ala	Gly	Asp	Leu	Leu	Ala	Ser	Gln	Arg	Leu	Glu	His
	210					215					220				
His	His	Phe	Val	Asp	Pro	Val	Asp	Glu	Phe	Arg	Thr	Glu	Val	Arg	Ile
225					230					235					240
Asp	Arg	Val	His	His	Cys	Gly	Thr	Leu	Arg	Leu	Ala	Val	Ala	Gly	Gln

20	25	30
Val Asn Pro Leu Ile Gln Lys	Val Phe Leu Leu Phe Pro Arg Ala Thr	
35	40	45
Lys Arg Pro Phe His Cys Met	Arg Gln Arg Ser Arg Ala Tyr Arg Thr	
50	55	60
Pro Met Lys Lys Pro Arg Arg	Ser Gly Ala Phe Pro Val Arg Pro Arg	
65	70	75
Arg Gly Gln Ala Lys Thr Ile Ser	Ser Pro Ser Thr Phe Ala Glu Ile	
85	90	95
Leu Ala Pro Gly Ala Asn Leu Pro	Ala Arg Ile Ser Cys Ala Ser Gly	
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Phe Ser Ile Gln Arg Trp Met	Ala Arg Phe Ser Gly Arg Ala Pro	
115	120	125

<210> 276
 <211> 1677
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 276

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cagccgcac	cgcatggaga	tcgactccaa	gccggaggaa	ctggatcgtc	tcgaccgtcg	180
cctgatccag	ctgaagatcg	agcgcgaggg	gctgaagaag	gaagacgacg	aagccaccag	240
gaagcgcctg	gccaaagtgg	aggaggatat	cgtcaagctc	gagcgcgaat	acgccgacct	300
cgaggagatc	tggaagtccg	agaaggccga	ggtgcagggc	tcggcgcaga	tccagcagaa	360
gatcgagcag	gccaaagcagg	agatggaggc	ggcgcggcgc	aagggcgacc	tcgagagcat	420
ggcgcgcac	cagtaccaga	ccatcccggg	cctggaacgc	agcctgcaga	tggtcgacca	480
gcacggcaag	accgagaacc	agttgctgcg	caacaaggtg	accgacgagg	aaatcgccga	540
agtggtttcc	aagtggaccg	gtatcccggg	gtcgaagatg	ctcgagggcg	agcgcgagaa	600
gctgctgctc	atggagcagg	agctgcatcg	gcgagtgatc	ggccaggacg	aggcggtagt	660
cgccgtgtcc	aacgccgtgc	gccgttcgcg	cgccggcctc	gccgatccga	accggccgag	720
cggtcgttcc	ctcttctctg	gccccgaccg	ggtgggcaag	accgagttgt	gcaaggcgct	780
ggccgagttc	ctcttcgata	ccgaggaggc	gctgggtcgg	atagatatgt	ccgagttcat	840
ggagaaaac	tcggtggccc	gcctgatcgc	cgcgctcccg	ggctacgtcg	gcttcgagga	900
aggcggctac	ctgaccgagg	cgatccgccc	caagccctac	tcggtggtgc	tgctggacga	960
ggtggagaag	gcccattccg	atgtattcaa	catttctctc	caggtgctcg	aggacggacg	1020
cctgaccgac	agtcacgggc	gtacggtgga	cttccgcaac	accgtggtgg	tgatgacctc	1080
caacctcggt	tcggcgcaga	tccaggagct	ggccggcgac	cgcgaggcgc	aacgtgccgc	1140
agtgatggac	gcggtcaatg	cgcaattccg	tccggaattc	atcaaccgga	tcgacgaagt	1200
ggtggtgttc	gagccgctgg	ctcgcgagca	gatcgccggc	atcgccgaga	tccagctcgg	1260
tcgcctgctc	aagcgcctgg	ccgagcgcga	gctgagcctg	gaactgagcc	aggaggcgct	1320
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catccagcgc	tggtatcgaga	acccgctggc	gcaactgata	ctggccggca	aattcgcgcc	1440
gggtgccagt	atctcggcga	aggtggaagg	cgacgagatc	gtcttcgcct	gacctcttcg	1500
ggggcggaca	gggaaagccc	cgcttcggcg	gggctttttc	atgggcgtcc	ggtaggcgcg	1560
agagcgctgc	cgcatgcagt	ggaagggccg	ttttgtcgct	cgtggaaaaa	gaagaaaaac	1620
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<210> 277
 <211> 558
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 277

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Gln Ala Val Ala Pro Leu His His Arg Ser Ala Thr Ala Gly Gln Gly

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		35					40					45					
Leu	Gln	Ala	Gly	Gly	Thr	Gly	Ser	Ser	Arg	Pro	Ser	Pro	Asp	Pro	Ala		
	50					55					60						
Glu	Asp	Arg	Ala	Arg	Gly	Ala	Glu	Glu	Gly	Arg	Arg	Arg	Ser	His	Gln		
65					70					75					80		
Glu	Ala	Pro	Gly	Gln	Ala	Gly	Gly	Gly	Tyr	Arg	Gln	Ala	Arg	Ala	Arg		
				85					90					95			
Ile	Arg	Arg	Pro	Arg	Gly	Asp	Leu	Glu	Val	Arg	Glu	Gly	Arg	Gly	Ala		
			100					105						110			
Gly	Leu	Gly	Ala	Asp	Pro	Ala	Glu	Asp	Arg	Ala	Gly	Gln	Ala	Gly	Asp		
		115					120					125					
Gly	Gly	Gly	Ala	Ala	Gln	Gly	Arg	Pro	Arg	Glu	His	Gly	Ala	His	Pro		
	130					135					140						
Val	Pro	Asp	His	Pro	Gly	Pro	Gly	Thr	Gln	Pro	Ala	Asp	Gly	Arg	Pro		
145					150					155					160		
Ala	Arg	Gln	Asp	Arg	Glu	Pro	Val	Ala	Ala	Gln	Gln	Gly	Asp	Arg	Arg		
			165					170						175			
Gly	Asn	Arg	Arg	Ser	Gly	Phe	Gln	Val	Asp	Arg	Tyr	Pro	Gly	Val	Glu		
		180					185						190				
Asp	Ala	Arg	Gly	Arg	Ala	Arg	Glu	Ala	Ala	Ala	His	Gly	Ala	Gly	Ala		
	195						200					205					
Ala	Ser	Ala	Ser	Asp	Arg	Pro	Gly	Arg	Gly	Gly	Ser	Arg	Arg	Val	Gln		
	210					215					220						
Arg	Arg	Ala	Pro	Phe	Ala	Arg	Arg	Pro	Arg	Arg	Ser	Glu	Pro	Ala	Glu		
225				230						235					240		
Arg	Leu	Val	Pro	Leu	Pro	Arg	Pro	Asp	Arg	Gly	Gly	Gln	Asp	Arg	Val		
			245					250						255			
Val	Gln	Gly	Ala	Gly	Arg	Val	Pro	Leu	Arg	Tyr	Arg	Gly	Gly	Ala	Gly		
		260					265						270				
Ala	Asp	Arg	Tyr	Val	Arg	Val	His	Gly	Glu	Thr	Leu	Gly	Gly	Pro	Pro		
	275					280						285					
Asp	Arg	Arg	Ala	Ser	Gly	Leu	Arg	Arg	Leu	Arg	Gly	Arg	Arg	Leu	Pro		
	290				295						300						
Asp	Arg	Gly	Asp	Pro	Pro	Gln	Ala	Leu	Leu	Gly	Gly	Ala	Ala	Gly	Arg		
305				310					315						320		
Gly	Gly	Glu	Gly	Pro	Ser	Gly	Cys	Ile	Gln	His	Ser	Pro	Pro	Gly	Ala		
			325					330						335			
Arg	Gly	Arg	Thr	Pro	Asp	Arg	Gln	Ser	Arg	Ala	Tyr	Gly	Gly	Leu	Pro		
		340					345						350				
Gln	His	Arg	Gly	Gly	Asp	Asp	Leu	Gln	Pro	Arg	Phe	Gly	Ala	Asp	Pro		
	355					360						365					
Gly	Ala	Gly	Arg	Arg	Pro	Arg	Gly	Ala	Thr	Cys	Arg	Ser	Asp	Gly	Arg		
	370				375					380							
Gly	Gln	Cys	Ala	Leu	Pro	Ser	Gly	Ile	His	Gln	Pro	Asp	Arg	Arg	Ser		
385				390					395						400		
Gly	Gly	Val	Arg	Ala	Ala	Gly	Ser	Arg	Ala	Asp	Arg	Arg	His	Arg	Arg		
			405					410					415				
Asp	Pro	Ala	Arg	Ser	Pro	Ala	Gln	Ala	Pro	Gly	Arg	Ala	Arg	Ala	Glu		
		420					425						430				
Pro	Gly	Thr	Glu	Pro	Gly	Gly	Ala	Gly	Gln	Ala	Asp	Cys	Arg	Arg	Leu		
	435					440					445						
Arg	Pro	Gly	Leu	Trp	Arg	Thr	Pro	Ala	Glu	Ala	Gly	His	Pro	Ala	Leu		
	450				455						460						
Asp	Arg	Glu	Pro	Ala	Gly	Ala	Thr	Asp	Pro	Gly	Arg	Gln	Ile	Arg	Ala		
465				470				475							480		
Gly	Cys	Gln	Tyr	Leu	Gly	Glu	Gly	Gly	Arg	Arg	Arg	Asp	Arg	Leu	Arg		
				485				490						495			

Leu Thr Ser Ser Gly Ala Asp Arg Glu Ser Pro Ala Ser Ala Gly Leu
500 505 510
Phe His Gly Arg Pro Val Gly Ala Arg Ala Leu Pro His Ala Val Glu
515 520 525
Gly Pro Phe Cys Arg Ser Trp Lys Lys Lys Lys Asn Phe Leu Asp Gln
530 535 540
Arg Val Asp Met Pro Ala Arg Ile Arg Lys Met Ala Arg Leu
545 550 555

<210> 278
<211> 357
<212> DNA
<213> *Pseudomonas aeruginosa*

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tcagttgctc cagcgggttc tcgatccagc gctggatggc ccgcttcagc gggcgtgctc 180
catagaccgg gtcgaagccg acggcaatca gcttgtccag cgcctcctgg ctcagttcca 240
ggctcagctc gcgctcggcc aggcgcttgc gcaggcgacc gagctggatc tcggcgatgc 300
cggcgatctg ctcgcgagcc agcggctcga acaccaccac ttcgtcgatc cggttga 357

<210> 279
<211> 118
<212> PRT
<213> *Pseudomonas aeruginosa*

<400> 279
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1 5 10 15
Arg Arg Arg Arg Ser Arg Arg Leu Pro Pro Ser Pro Arg Tyr Trp His
20 25 30
Pro Ala Arg Ile Cys Arg Pro Gly Ser Val Ala Pro Ala Gly Ser Arg
35 40 45
Ser Ser Ala Gly Trp Pro Ala Ser Ala Gly Val Arg His Arg Pro Gly
50 55 60
Arg Ser Arg Arg Gln Ser Ala Cys Pro Ala Pro Pro Gly Ser Val Pro
65 70 75 80
Gly Ser Ala Arg Ala Arg Pro Gly Ala Cys Ala Gly Asp Arg Ala Gly
85 90 95
Ser Arg Arg Cys Arg Arg Ser Ala Arg Glu Pro Ala Ala Arg Thr Pro
100 105 110
Pro Leu Arg Arg Ser Gly
115

<210> 280
<211> 2580
<212> DNA
<213> *Pseudomonas aeruginosa*

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gacgcccagt ccctggccgt tggccatgac catccggcca tcgagccggt gcacctgctt 120
tccgccctgc tcgagcagca aggcgggttc atcaagcccc tgctgatgca ggtcggcttc 180
gatatcgccg ccctgcgcag cggcctcaac aaagaactcg acgcgctgcc gaagatccag 240
agccccgaccg gcgacgtgaa cctgtcccag gatctcgac gcctgctcaa ccaggctgac 300
cgcttgcccc agcagaaggg cgaccagttc atctccagcg agctgggtatt gctggccgcg 360

atggacgaga	acaccaggct	cggcaagctg	ctgctcggcc	agggcggtgc	gcgcaaggcg	420
ctggagaatg	ccgtggccaa	cctgcgtggc	ggcgaagcgg	tgaacgaccc	gaacgtcgag	480
gagtcgcgcc	aggcgctgga	caagtacacc	gtcgacatga	ccaagcgcg	cgaggaaggc	540
aagctcgacc	cggatgatcg	tcgcgacgac	gagatccgcc	ggaccatcca	ggtcctgcag	600
cggcggacca	agaacaaccc	ggtgctgata	ggcgaacccg	gcgtcggcaa	gaccgccatc	660
gtcgagggcc	tggcccagcg	catcatcaac	ggcgaagtgc	cggacggcct	caaggacaag	720
cgcttctggt	ccctggacat	gggggcgctg	atcgccggtg	ccaagtcccg	cggcgagttc	780
gaggaacgcc	tgaaggcgg	cctcaacgaa	ctgggcaagc	aggaaggccg	ggtcatcctg	840
ttcatcgacg	aactgcacac	catggtcggc	gccggcaagg	cggaagggtg	catggacgcc	900
ggcaacatgc	tcaagccggc	tctggcgcg	ggcgagctgc	actgcgtcgg	tgctactacc	960
ctcgacgagt	atcgccagta	catcgagaag	gatgccgcgc	tggagcgccg	cttcacagaag	1020
gtgctggtgg	acgaaccgag	cgaggaagac	accatcgcca	tcctccgtgg	cctcaaggaa	1080
cgctatgaag	tgcaccacgg	ggtgagcatc	accgacggcg	cgatcatcgc	cgcggccaag	1140
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gagggcgcca	gccgcatccg	catggagatc	gactccaagc	cggaggaact	ggatcgtctc	1260
gaccgtcgcc	tgatccagct	gaagatcgag	cgcgagggcg	tgaagaagga	agacgacgaa	1320
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gtcgaccagc	acggcaagac	cgagaaccag	ttgctgcgca	acaagggtgac	cgacgaggaa	1620
atcgccgaag	tggtttccaa	gtggaccggg	atcccgggtg	cgaagatgct	cgagggcgag	1680
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cggccgagcg	gctcgttcct	cttcctcggc	ccgaccgggg	tgggcaagac	cgagttgtgc	1860
aaggcgctgg	ccgagttcct	cttcgatacc	gaggaggcgc	tggtgcggat	agatatgtcc	1920
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gacgaagtgg	tggtgttcga	gccgctggct	cgcgagcaga	tcgccggcat	cgccgagatc	2340
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aagcgggcca	tccagcgctg	gatcgagaac	cgcgtggcgc	aactgacctc	ggccggcaaa	2520
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<210> 281

<211> 859

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 281

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Ala	Ile	Glu	Pro	Val	His	Leu	Leu	Ser	Ala	Leu	Leu	Glu	Gln	Gln	Gly
		35					40						45		
Gly	Ser	Ile	Lys	Pro	Leu	Leu	Met	Gln	Val	Gly	Phe	Asp	Ile	Ala	Ala
		50				55					60				
Leu	Arg	Ser	Gly	Leu	Asn	Lys	Glu	Leu	Asp	Ala	Leu	Pro	Lys	Ile	Gln
65					70					75				80	
Ser	Pro	Thr	Gly	Asp	Val	Asn	Leu	Ser	Gln	Asp	Leu	Ala	Arg	Leu	Leu
			85					90					95		
Asn	Gln	Ala	Asp	Arg	Leu	Ala	Gln	Gln	Lys	Gly	Asp	Gln	Phe	Ile	Ser
			100					105					110		

Ser	Glu	Leu	Val	Leu	Leu	Ala	Ala	Met	Asp	Glu	Asn	Thr	Arg	Leu	Gly
		115					120					125			
Lys	Leu	Leu	Leu	Gly	Gln	Gly	Val	Ser	Arg	Lys	Ala	Leu	Glu	Asn	Ala
	130					135					140				
Val	Ala	Asn	Leu	Arg	Gly	Gly	Glu	Ala	Val	Asn	Asp	Pro	Asn	Val	Glu
145					150					155					160
Glu	Ser	Arg	Gln	Ala	Leu	Asp	Lys	Tyr	Thr	Val	Asp	Met	Thr	Lys	Arg
				165					170					175	
Ala	Glu	Glu	Gly	Lys	Leu	Asp	Pro	Val	Ile	Gly	Arg	Asp	Asp	Glu	Ile
			180					185					190		
Arg	Arg	Thr	Ile	Gln	Val	Leu	Gln	Arg	Arg	Thr	Lys	Asn	Asn	Pro	Val
	195						200					205			
Leu	Ile	Gly	Glu	Pro	Gly	Val	Gly	Lys	Thr	Ala	Ile	Val	Glu	Gly	Leu
	210					215					220				
Ala	Gln	Arg	Ile	Ile	Asn	Gly	Glu	Val	Pro	Asp	Gly	Leu	Lys	Asp	Lys
225					230					235					240
Arg	Leu	Leu	Ala	Leu	Asp	Met	Gly	Ala	Leu	Ile	Ala	Gly	Ala	Lys	Phe
				245					250					255	
Arg	Gly	Glu	Phe	Glu	Glu	Arg	Leu	Lys	Ala	Val	Leu	Asn	Glu	Leu	Gly
			260					265					270		
Lys	Gln	Glu	Gly	Arg	Val	Ile	Leu	Phe	Ile	Asp	Glu	Leu	His	Thr	Met
	275					280						285			
Val	Gly	Ala	Gly	Lys	Ala	Glu	Gly	Ala	Met	Asp	Ala	Gly	Asn	Met	Leu
	290					295					300				
Lys	Pro	Ala	Leu	Ala	Arg	Gly	Glu	Leu	His	Cys	Val	Gly	Ala	Thr	Thr
305					310					315					320
Leu	Asp	Glu	Tyr	Arg	Gln	Tyr	Ile	Glu	Lys	Asp	Ala	Ala	Leu	Glu	Arg
				325					330					335	
Arg	Phe	Gln	Lys	Val	Leu	Val	Asp	Glu	Pro	Ser	Glu	Glu	Asp	Thr	Ile
			340					345					350		
Ala	Ile	Leu	Arg	Gly	Leu	Lys	Glu	Arg	Tyr	Glu	Val	His	His	Gly	Val
		355					360					365			
Ser	Ile	Thr	Asp	Gly	Ala	Ile	Ile	Ala	Ala	Ala	Lys	Leu	Ser	His	Arg
	370				375						380				
Tyr	Ile	Thr	Asp	Arg	Gln	Leu	Pro	Asp	Lys	Ala	Ile	Asp	Leu	Ile	Asp
385					390					395					400
Glu	Ala	Ala	Ser	Arg	Ile	Arg	Met	Glu	Ile	Asp	Ser	Lys	Pro	Glu	Glu
			405						410					415	
Leu	Asp	Arg	Leu	Asp	Arg	Arg	Leu	Ile	Gln	Leu	Lys	Ile	Glu	Arg	Glu
			420					425					430		
Ala	Leu	Lys	Lys	Glu	Asp	Asp	Glu	Ala	Thr	Arg	Lys	Arg	Leu	Ala	Lys
		435					440					445			
Leu	Glu	Glu	Asp	Ile	Val	Lys	Leu	Glu	Arg	Glu	Tyr	Ala	Asp	Leu	Glu
	450					455					460				
Glu	Ile	Trp	Lys	Ser	Glu	Lys	Ala	Glu	Val	Gln	Gly	Ser	Ala	Gln	Ile
465					470					475					480
Gln	Gln	Lys	Ile	Glu	Gln	Ala	Lys	Gln	Glu	Met	Glu	Ala	Ala	Arg	Arg
				485					490					495	
Lys	Gly	Asp	Leu	Glu	Ser	Met	Ala	Arg	Ile	Gln	Tyr	Gln	Thr	Ile	Pro
			500					505					510		
Asp	Leu	Glu	Arg	Ser	Leu	Gln	Met	Val	Asp	Gln	His	Gly	Lys	Thr	Glu
		515					520					525			
Asn	Gln	Leu	Leu	Arg	Asn	Lys	Val	Thr	Asp	Glu	Glu	Ile	Ala	Glu	Val
	530				535						540				
Val	Ser	Lys	Trp	Thr	Gly	Ile	Pro	Val	Ser	Lys	Met	Leu	Glu	Gly	Glu
545					550					555					560
Arg	Glu	Lys	Leu	Leu	Arg	Met	Glu	Gln	Glu	Leu	His	Arg	Arg	Val	Ile
				565					570					575	
Gly	Gln	Asp	Glu	Ala	Val	Val	Ala	Val	Ser	Asn	Ala	Val	Arg	Arg	Ser

145		150		155		160									
Leu	Arg	Arg	Ala	Ala	Ser	Ile	Ser	Cys	Leu	Ala	Cys	Ser	Ile	Phe	Cys
		165		170		175									
Trp	Ile	Cys	Ala	Glu	Pro	Cys	Thr	Ser	Ala	Phe	Ser	Asp	Phe	Gln	Ile
		180		185		190									
Ser	Ser	Arg	Ser	Ala	Tyr	Ser	Arg	Ser	Ser	Leu	Thr	Ile	Ser	Ser	Ser
		195		200		205									
Ser	Leu	Ala	Arg	Arg	Phe	Leu	Val	Ala	Ser	Ser	Ser	Ser	Phe	Phe	Ser
		210		215		220									
Ala	Ser	Arg	Ser	Ile	Phe	Ser	Trp	Ile	Arg	Arg	Arg	Ser	Arg	Arg	Ser
		225		230		235									
Ser	Ser	Ser	Gly	Leu	Glu	Ser	Ile	Ser	Met	Arg	Met	Arg	Leu	Ala	Ala
		245		250		255									
Ser	Ser	Ile	Arg	Ser	Met	Ala	Leu	Ser	Gly	Ser	Cys	Arg	Ser	Val	Met
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<210> 286
 <211> 564
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 286	
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gccggttcgg atcggcgcagg ccggcgccgc aacggcgcac ggcgttggac acggcgacta	180
ccgctctgct ctggccgata actcgccgat gcagctcctg ctccatgcgc agcagcttct	240
cgcgctcgcc ctcgagcatc ttcgacaccg ggataccggc ccacttggaa accacttcgg	300
cgatttcctc gtcggtcacc ttgttgcgca gcaactgggt ctcgggtcttg ccgtgctggt	360
cgaccatctg caggctgcgt tccagggtccg ggatggctct gtactgggatg cgcgccatgc	420
tctcgaggtc gcccttgcgc cgcgccgcct ccattctcctg cttggcctgc tcgatcttct	480
gctggatctg cgccgagccc tgcacctcgg ccttctcgga cttccagatc tcctcgaggt	540
cggcgtattc gcgctcgagc ttga	564

<210> 287
 <211> 187
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 287	
Thr Arg Thr Tyr Leu Ser Ala Pro Ala Pro Pro Arg Tyr Arg Arg Gly	
1 5 10 15	
Thr Arg Pro Ala Pro Cys Thr Thr Arg Ser Cys Pro Pro Arg Ser Gly	
20 25 30	
Arg Gly Arg Gly Thr Ser Arg Ser Ala Gly Ser Asp Arg Arg Gly Arg	
35 40 45	
Arg Ala Asn Gly Ala Arg Arg Trp Thr Arg Arg Leu Pro Pro Arg Pro	
50 55 60	
Gly Arg Ser Leu Ala Asp Ala Ala Pro Ala Pro Cys Ala Ala Ser	
65 70 75 80	
Arg Ala Arg Pro Arg Ala Ser Ser Thr Pro Gly Tyr Arg Ser Thr Trp	
85 90 95	
Lys Pro Leu Arg Arg Phe Pro Arg Arg Ser Pro Cys Cys Ala Ala Thr	
100 105 110	
Gly Ser Arg Ser Cys Arg Ala Gly Arg Pro Ser Ala Gly Cys Val Pro	
115 120 125	
Gly Pro Gly Trp Ser Gly Thr Gly Cys Ala Pro Cys Ser Arg Gly Arg	
130 135 140	
Pro Cys Ala Ala Pro Pro Pro Ser Pro Ala Trp Pro Ala Arg Ser Ser	

145		150		155		160
Ala Gly Ser Ala Pro Ser Pro Ala Pro Arg Pro Ser Arg Thr Ser Arg						
	165		170		175	
Ser Pro Arg Gly Arg Arg Ile Arg Ala Arg Ala						
	180		185			

<210> 288
 <211> 306
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 288
 agaaggaaga cgacgaagcc accaggaagc gcctggccaa gctggaggag gatatcgtca 60
 agctcgagcg cgaatacgcc gacctcgagg agatctggaa gtccgagaag gccgaggtgc 120
 agggctcggc gcagatccag cagaagatcg agcaggccaa gcaggagatg gaggcggcgc 180
 ggcgcaaggg cgacctcgag agcatggcgc gcatccagta ccagaccatc ccggacctgg 240
 aacgcagcct gcagatggtc gaccagcacg gcaagaccga gaaccagttg ctgcgcaaca 300
 aggtga 306

<210> 289
 <211> 101
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 289
 Arg Arg Lys Thr Thr Lys Pro Pro Gly Ser Ala Trp Pro Ser Trp Arg
 1 5 10 15
 Arg Ile Ser Ser Ser Ser Ser Ala Asn Thr Pro Thr Ser Arg Arg Ser
 20 25 30
 Gly Ser Pro Arg Arg Pro Arg Cys Arg Ala Arg Arg Ser Ser Arg
 35 40 45
 Arg Ser Ser Arg Pro Ser Arg Arg Trp Arg Arg Arg Gly Ala Arg Ala
 50 55 60
 Thr Ser Arg Ala Trp Arg Ala Ser Ser Thr Arg Pro Ser Arg Thr Trp
 65 70 75 80
 Asn Ala Ala Cys Arg Trp Ser Thr Ser Thr Ala Arg Pro Arg Thr Ser
 85 90 95
 Cys Cys Ala Thr Arg
 100

<210> 290
 <211> 312
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 290
 aggcggtcct caacgaactg ggcaagcagg aaggccgggt catcctgttc atcgacgaac 60
 tgcacaccat ggtcggcgcc ggcaaggcgg aaggtgccat ggacgccggc aacatgctca 120
 agccggctct ggcgcgcgcc gagctgcact gcgtcggtgc tactaccctc gacgagtatc 180
 gccagtacat cgagaaggat gccgcgctgg agcgcgcgtt ccagaagggtg ctggtggacg 240
 aaccgagcga ggaagacacc atcgccatcc tccgtggcct caaggaacgc tatgaagtgc 300
 accacggggt ga 312

<210> 291
 <211> 103
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 291
 Arg Arg Ser Ser Thr Asn Trp Ala Ser Arg Lys Ala Gly Ser Ser Cys
 1 5 10 15
 Ser Ser Thr Asn Cys Thr Pro Trp Ser Ala Pro Ala Arg Arg Lys Val
 20 25 30
 Pro Trp Thr Pro Ala Thr Cys Ser Ser Arg Leu Trp Arg Ala Ala Ser
 35 40 45
 Cys Thr Ala Ser Val Leu Leu Pro Ser Thr Ser Ile Ala Ser Thr Ser
 50 55 60
 Arg Arg Met Pro Arg Trp Ser Ala Ala Ser Arg Arg Cys Trp Trp Thr
 65 70 75 80
 Asn Arg Ala Arg Lys Thr Pro Ser Pro Ser Ser Val Ala Ser Arg Asn
 85 90 95
 Ala Met Lys Cys Thr Thr Gly
 100

<210> 292
 <211> 789
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 292
 ccgcctggcc cagcagaagg gcgaccagtt catctccagc gagctggtat tgctggccgc 60
 gatggacgag aacaccaggc tcggcaagct gctgctcggc cagggcgtgt cgcgcaaggc 120
 gctggagaat gccgtggcca acctgcgtgg cggcgaagcg gtgaacgacc cgaacgtcga 180
 ggagtcgcgc caggcgctgg acaagtacac cgtcgacatg accaagcgcg ccgaggaagg 240
 caagctcgac ccggtgatcg gtcgcgacga cgagatccgc cggaccatcc aggtcctgca 300
 gcggcggacc aagaacaacc cggtgctgat cggcgaacct gccgtcggca agaccgccat 360
 cgtcgagggc ctggcccagc gcatcatcaa cggcgaagtg ccggacggcc tcaaggacaa 420
 gcgcctgctg gccctggaca tgggggcgct gatcgccggt gccaaagttcc gcggcgagtt 480
 cgaggaacgc ctgaaggcgg tcctcaacga actgggcaag caggaaggcc gggtcattct 540
 gttcatcgac gaactgcaca ccatggtcgg cgccggcaag gcggaagggtg ccatggacgc 600
 cggcaacatg ctcaagccgg ctctggcgcg cggcgagctg cactgcgtcg gtgctactac 660
 cctcgacgag tatcgccagt acatcgagaa ggatgccgcg ctggagcgcc gcttccagaa 720
 ggtgctggtg gacgaaccga gcgaggaaga caccatcgcc atcctccgtg gcctcaagga 780
 acgctatga 789

<210> 293
 <211> 262
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 293
 Pro Pro Gly Pro Ala Glu Gly Arg Pro Val His Leu Gln Arg Ala Gly
 1 5 10 15
 Ile Ala Gly Arg Asp Gly Arg Glu His Gln Ala Arg Gln Ala Ala Ala
 20 25 30
 Arg Pro Gly Arg Val Ala Gln Gly Ala Gly Glu Cys Arg Gly Gln Pro
 35 40 45
 Ala Trp Arg Arg Ser Gly Glu Arg Pro Glu Arg Arg Gly Val Ala Pro
 50 55 60
 Gly Ala Gly Gln Val His Arg Arg His Asp Gln Ala Arg Arg Gly Arg
 65 70 75 80
 Gln Ala Arg Pro Gly Asp Arg Ser Arg Arg Arg Asp Pro Pro Asp His
 85 90 95
 Pro Gly Pro Ala Ala Ala Asp Gln Glu Gln Pro Gly Ala Asp Arg Arg
 100 105 110
 Thr Arg Arg Arg Gln Asp Arg His Arg Arg Gly Pro Gly Pro Ala His

Ser Ser Pro Arg Ala Arg Ala Gly Leu Ser Met Leu Pro Ala Ser Met
 50 55 60
 Ala Pro Ser Ala Leu Pro Ala Pro Thr Met Val Cys Ser Ser Ser Met
 65 70 75 80
 Asn Arg Met Thr Arg Pro Ser Cys Leu Pro Ser Ser Leu Arg Thr Ala
 85 90 95
 Phe Arg Arg Ser Ser Asn Ser Pro Arg Asn Leu Ala Pro Ala Ile Ser
 100 105 110
 Ala Pro Met Ser Arg Ala Ser Arg Arg Leu Ser Leu Arg Pro Ser Gly
 115 120 125
 Thr Ser Pro Leu Met Met Arg Trp Ala Arg Pro Ser Thr Met Ala Val
 130 135 140
 Leu Pro Thr Pro Gly Ser Pro Ile Ser Thr Gly Leu Phe Leu Val Arg
 145 150 155 160
 Arg Cys Arg Thr Trp Met Val Arg Arg Ile Ser Ser Ser Arg Pro Ile
 165 170 175
 Thr Gly Ser Ser Leu Pro Ser Ser Ala Arg Leu Val Met Ser Thr Val
 180 185 190
 Tyr Leu Ser Ser Ala Trp Arg Asp Ser Ser Thr Phe Gly Ser Phe Thr
 195 200 205
 Ala Ser Pro Pro Arg Arg Leu Ala Thr Ala Phe Ser Ser Ala Leu Arg
 210 215 220
 Asp Thr Pro Trp Pro Ser Ser Ser Leu Pro Ser Leu Val Phe Ser Ser
 225 230 235 240
 Ile Ala Ala Ser Asn Thr Ser Ser Leu Glu Met Asn Trp Ser Pro Phe
 245 250 255
 Cys Trp Ala Arg Arg Ser Ala Trp Leu Ser Arg Arg Ala Arg Ser Trp
 260 265 270
 Asp Arg Phe Thr Ser Pro Val Gly Leu Trp Ile Phe Gly Ser Ala Ser
 275 280 285
 Ser Ser Leu Leu Arg Pro Leu Arg Arg Ala Ala Ile Ser Lys Pro Thr
 290 295 300
 Cys Ile Ser Arg Gly Leu Ile Glu Pro Pro Cys Cys Ser Ser Arg Ala
 305 310 315 320
 Glu Ser Arg Cys Thr Gly Ser Met Ala Gly Trp Ser Trp Pro Thr Ala
 325 330 335
 Arg Asp Trp Ala Ser Glu Ser Ala Ser Cys Ser Leu Leu Val Lys Arg
 340 345 350
 Ser Ile Arg Met Gly Arg Pro Ser Phe Tyr Arg Ala Gly Arg Asn Asp
 355 360 365
 Gly Cys Pro
 370

<210> 296
 <211> 354
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 296
 tgcgctgggc caggccctcg acgatggcgg tcttgccgac gccggggttcg ccgatcagca 60
 ccgggttggt cttggtccgc cgctgcagga cctggatggc ccggcggatc tcgtcgtcgc 120
 gaccgatcac cgggtcgcgc ttgccttcct cggcgcgctt ggtcatgtcg acggtgtact 180
 tgtccagcgc ctggcgcgac tcctcgacgt tcgggtcgtt caccgcttcg ccgccacgca 240
 gggtggccac ggcattctcc agcgccttgc gcgacacgcc ctggccgagc agcagcttgc 300
 cgagcctggg gttctcgtcc atcgcgcca gcaataccag ctcgctggag atga 354

<210> 297
 <211> 117

<212> PRT
 <213> Pseudomonas aeruginosa

<400> 297
 Cys Ala Gly Pro Gly Pro Arg Arg Trp Arg Ser Cys Arg Arg Arg Val
 1 5 10 15
 Arg Arg Ser Ala Pro Gly Cys Ser Trp Ser Ala Ala Ala Gly Pro Gly
 20 25 30
 Trp Ser Gly Gly Ser Arg Arg Arg Asp Arg Ser Pro Gly Arg Ala Cys
 35 40 45
 Leu Pro Arg Arg Ala Trp Ser Cys Arg Arg Cys Thr Cys Pro Ala Pro
 50 55 60
 Gly Ala Thr Pro Arg Arg Ser Gly Arg Ser Pro Leu Arg Arg His Ala
 65 70 75 80
 Gly Trp Pro Arg His Ser Pro Ala Pro Cys Ala Thr Arg Pro Gly Arg
 85 90 95
 Ala Ala Ala Cys Arg Ala Trp Cys Ser Arg Pro Ser Arg Pro Ala Ile
 100 105 110
 Pro Ala Arg Trp Arg
 115

<210> 298
 <211> 513
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 298
 ccgccgactg cctgccggcg ttgttctgcg accgctcggg caccggggtg gccgcggccc 60
 atgccggctg gcgcgggctg gcggcgggcg tgctggaggc gacggtggac agcctgggagc 120
 tgcccggcga cgaactgctg gtctggctgg ggccggcgat cggcccgag gccttcgagg 180
 tcggcggcga ggtccgcgat gcattcgtcg ctgcgcacgc cgaggcgcg tcggctttcg 240
 tacctagcgc caatccgggc cgcttcattg ccgacatcta ccgactcgcg cggatccgcc 300
 tgggcgcccc tggcgctcacc gccgtgcatg gcggcggtt ctgcaccttc agcgataccg 360
 cgcgcttcta ttcctaccgc cgctcgtcgc gtaccggccg ttttgccagc ctggtctggc 420
 tccaggacta ggcccgcga ggttatcgg cggaactga ccgatgtcac ggtccggctg 480
 cttgaaccgc ggaaaatcgc ccttatctac tga 513

<210> 299
 <211> 170
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 299
 Pro Pro Thr Ala Cys Arg Arg Cys Ser Ala Thr Ala Arg Ala Pro Gly
 1 5 10 15
 Trp Pro Arg Pro Met Pro Ala Gly Ala Gly Trp Arg Arg Ala Cys Trp
 20 25 30
 Arg Arg Arg Trp Thr Ala Trp Ala Cys Pro Ala Thr Asn Cys Trp Ser
 35 40 45
 Gly Trp Gly Arg Arg Ser Ala Arg Arg Pro Ser Arg Ser Ala Ala Arg
 50 55 60
 Ser Ala Met His Ser Ser Leu Arg Thr Pro Arg Arg Ala Arg Leu Ser
 65 70 75 80
 Tyr Leu Ala Pro Ile Arg Ala Ala Ser Trp Pro Thr Ser Thr Asp Ser
 85 90 95
 Arg Gly Ser Ala Trp Ala Pro Met Ala Ser Pro Pro Cys Met Ala Ala
 100 105 110
 Ala Ser Ala Pro Ser Ala Ile Pro Arg Ala Ser Ile Pro Thr Ala Ala

	115					120					125						
Arg	Arg	Val	Pro	Ala	Val	Leu	Pro	Ala	Trp	Ser	Gly	Ser	Arg	Thr	Arg		
	130					135					140						
Pro	Ala	Gln	Val	Ile	Arg	Arg	Gln	Leu	Thr	Asp	Val	Thr	Val	Arg	Ser		
145					150					155					160		
Leu	Glu	Pro	Arg	Lys	Ile	Ala	Leu	Ile	Tyr								
				165					170								

<210> 300
 <211> 726
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 300
 ataagggcga ttttccgcgg ttcaagcgac cggaccgtga catcgggtcag ttgccgccgg 60
 ataacctgcg cgggcctagt cctggagcca gaccaggctg gcaaaacggc cgggtacgcga 120
 cgagcggcgg taggaataga agcgcgcggg atcgcgtgaag gtgcagaagc cgccgccatg 180
 cacggcgggtg acgccatggg cgcccaggcg gatccgcgcg agtcggtaga tgtcggccat 240
 gaagcggccc ggattggcgc taggtacgaa agccgagcgc gcctcggcgt gcgcagcgac 300
 gaatgcatcg cggacctcgc cgccgacctc gaaggcctgc gggccgatcg ccggccccag 360
 ccagaccagc agttcgtcgc cgggcacgcc caggctgtcc accgtcgcct ccagcacgcc 420
 cgccgccagc ccgcgccagc cggcatgggc cgcgccacc cgggtgcccg agcggtcgca 480
 gaacaacgcc ggcaggcagt cggcggtcac gatcgtacag gcgacgcccg gcatcgcgct 540
 ccagctggcg tcggccctga gcaccggttc gggtcggcct ccaccacgtc actccgtgca 600
 cctattccaa ccagctcggc cggcattcca gacgctcggg caggcgtcgg cggttttatt 660
 ccacggcgcg cggatcgctg tagacgtggg cgccaagggt cagactgtcg aagggtgcct 720
 ggctga 726

<210> 301
 <211> 241
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 301
 Ile Arg Ala Ile Phe Arg Gly Ser Ser Asp Arg Thr Val Thr Ser Val
 1 5 10 15
 Ser Cys Arg Arg Ile Thr Cys Ala Gly Leu Val Leu Glu Pro Asp Gln
 20 25 30
 Ala Gly Lys Thr Ala Gly Thr Arg Arg Ala Ala Val Gly Ile Glu Ala
 35 40 45
 Arg Gly Ile Ala Glu Gly Ala Glu Ala Ala Met His Gly Gly Asp
 50 55 60
 Ala Met Gly Ala Gln Ala Asp Pro Arg Glu Ser Val Asp Val Gly His
 65 70 75 80
 Glu Ala Ala Arg Ile Gly Ala Arg Tyr Glu Ser Arg Ala Arg Leu Gly
 85 90 95
 Val Arg Ser Asp Glu Cys Ile Ala Asp Leu Ala Ala Asp Leu Glu Gly
 100 105 110
 Leu Arg Ala Asp Arg Arg Pro Gln Pro Asp Gln Gln Phe Val Ala Gly
 115 120 125
 His Ala Gln Ala Val His Arg Arg Leu Gln His Ala Arg Arg Gln Pro
 130 135 140
 Ala Pro Ala Gly Met Gly Arg Gly His Pro Gly Ala Arg Ala Val Ala
 145 150 155 160
 Glu Gln Arg Arg Gln Ala Val Gly Gly His Asp Arg Thr Gly Asp Ala
 165 170 175
 Arg His Arg Ala Pro Ala Gly Val Gly Pro Glu His Arg Phe Gly Ser
 180 185 190

Ala Ser Thr Thr Ser Leu Arg Ala Pro Ile Pro Thr Ser Ser Ala Gly
195 200 205
Ile Pro Asp Ala Arg Ser Gly Val Gly Gly Phe Ile Pro Arg Arg Ala
210 215 220
Asp Arg Arg Arg Arg Gly Arg Gln Gly Ser Asp Cys Arg Arg Val Pro
225 230 235 240
Gly

<210> 302
<211> 513
<212> DNA
<213> *Pseudomonas aeruginosa*

<400> 302
cgtggtggag gccgacccga accggtgctc agggccgacg ccagctggag cgcgatgccg 60
ggcgtcgcct gtacgatcat gaccgccgac tgcctgccgg cgttggtctg cgaccgctcg 120
ggcaccggg tggccgcggc ccatgccggc tggcgcgggc tggcggcggg cgtgctggag 180
gcgacggtgg acagcctggg cgtgcccggc gacgaactgc tggctctggct ggggccggcg 240
atcgcccgcg aggccttcga ggtcggcgcc gaggtccgag atgcattcgt cgctgcgcac 300
gccgaggcgc gctcggcttt cgtacctagc gccaatccgg gccgcttcat ggccgacatc 360
taccgactcg cgcggatccg cctggggcgcc catggcgctca ccgccgtgca tggcggcggc 420
ttctgcacct tcagcgatac cgcgcgcttc tattcctacc gccgctcgtc gcgtaccggc 480
cgttttgcca gcctggtctg gctccaggac tag 513

<210> 303
<211> 170
<212> PRT
<213> *Pseudomonas aeruginosa*

<400> 303
Arg Gly Gly Gly Arg Pro Glu Pro Val Leu Arg Ala Asp Ala Ser Trp
1 5 10 15
Ser Ala Met Pro Gly Val Ala Cys Thr Ile Met Thr Ala Asp Cys Leu
20 25 30
Pro Ala Leu Phe Cys Asp Arg Ser Gly Thr Arg Val Ala Ala Ala His
35 40 45
Ala Gly Trp Arg Gly Leu Ala Ala Gly Val Leu Glu Ala Thr Val Asp
50 55 60
Ser Leu Gly Val Pro Gly Asp Glu Leu Leu Val Trp Leu Gly Pro Ala
65 70 75 80
Ile Gly Pro Gln Ala Phe Glu Val Gly Gly Glu Val Arg Asp Ala Phe
85 90 95
Val Ala Ala His Ala Glu Ala Arg Ser Ala Phe Val Pro Ser Ala Asn
100 105 110
Pro Gly Arg Phe Met Ala Asp Ile Tyr Arg Leu Ala Arg Ile Arg Leu
115 120 125
Gly Ala His Gly Val Thr Ala Val His Gly Gly Gly Phe Cys Thr Phe
130 135 140
Ser Asp Thr Ala Arg Phe Tyr Ser Tyr Arg Arg Ser Ser Arg Thr Gly
145 150 155 160
Arg Phe Ala Ser Leu Val Trp Leu Gln Asp
165 170

<210> 304
<211> 675
<212> DNA

<213> Pseudomonas aeruginosa

<400> 304

```
atgtcggcca tgaagcggcc cggattggcg ctaggtacga aagccgagcg cgcctcggcg      60
tgcgcagcga cgaatgcatc gcggacctcg ccgccgacct cgaaggcctg cgggccgatc      120
gccggcccca gccagaccag cagttcgtcg ccgggcacgc ccaggctgtc caccgtcgcc      180
tccagcacgc ccgccgccag cccgcgccag ccggcatggg ccgcggccac ccgggtgccc      240
gagcggtcgc agaacaacgc cggcaggcag tcggcgggtca tgatcgtaca ggcgacgccc      300
ggcatcgcgc tccagctggc gtcggccctg agcaccggtt cgggtcggcc tccaccacgt      360
cactccgtgc acctattcca accagctcgg ccggcattcc agacgctcgg tcaggcgtcg      420
gcgggttttat tccacggcgc gcggatcgtc gtagacgtgg gcgccaaggt tcagactgtc      480
gaagggtgcc tggctgaccc cgccactgcg cgtggtcacg caggcccgca cacgggccgg      540
cgccggccag tcgggggtca gccaggcggt caaccgacga acgcctcgcg atcctggcgc      600
aacaggctga gcagccagag gaattcttcc ggcagcggcg attcccactt catgcgcacg      660
ccggtggccg ggtga                                         675
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<210> 305

<211> 224

<212> PRT

<213> Pseudomonas aeruginosa

<400> 305

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Met Ser Ala Met Lys Arg Pro Gly Leu Ala Leu Gly Thr Lys Ala Glu
 1          5          10          15
Arg Ala Ser Ala Cys Ala Ala Thr Asn Ala Ser Arg Thr Ser Pro Pro
 20          25          30
Thr Ser Lys Ala Cys Gly Pro Ile Ala Gly Pro Ser Gln Thr Ser Ser
 35          40          45
Ser Ser Pro Gly Thr Pro Arg Leu Ser Thr Val Ala Ser Ser Thr Pro
 50          55          60
Ala Ala Ser Pro Arg Gln Pro Ala Trp Ala Ala Ala Thr Arg Val Pro
 65          70          75          80
Glu Arg Ser Gln Asn Asn Ala Gly Arg Gln Ser Ala Val Met Ile Val
 85          90          95
Gln Ala Thr Pro Gly Ile Ala Leu Gln Leu Ala Ser Ala Leu Ser Thr
100          105          110
Gly Ser Gly Arg Pro Pro Pro Arg His Ser Val His Leu Phe Gln Pro
115          120          125
Ala Arg Pro Ala Phe Gln Thr Leu Gly Gln Ala Ser Ala Val Leu Phe
130          135          140
His Gly Ala Arg Ile Val Val Asp Val Gly Ala Lys Val Gln Thr Val
145          150          155          160
Glu Gly Cys Leu Ala Asp Pro Ala Thr Ala Arg Gly His Ala Gly Pro
165          170          175
His Thr Gly Arg Arg Arg Pro Val Gly Gly Gln Pro Gly Val Gln Pro
180          185          190
Thr Asn Ala Ser Arg Ser Trp Arg Asn Arg Leu Ser Ser Gln Arg Asn
195          200          205
Ser Ser Gly Ser Gly Asp Ser His Phe Met Arg Thr Pro Val Ala Gly
210          215          220
```

<210> 306

<211> 342

<212> DNA

<213> Pseudomonas aeruginosa

<400> 306

```
gtgcacggag tgacgtggtg gaggccgacc cgaaccggtg ctcagggccg acgccagctg      60
```

```

gagcgcgatg ccgggcgctcg cctgtacgat catgaccgcc gactgcctgc cggcggttgtt 120
ctgcgaccgc tcgggcaccc ggggtggccgc ggcccatgcc ggctggcgcg ggctggcgcg 180
ggcggtgctg gaggcgacgg tggacagcct gggcggtgcc ggcgacgaac tgctggtctg 240
gctggggccg gcgatcgcc cgcaggcctt cgaggtcggc ggcgaggtcc gcgatgcatt 300
cgtcgctgcg cacgccgagg cgcgctcggc tttcgtacct ag 342

```

<210> 307
 <211> 113
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 307
Val His Gly Val Thr Trp Trp Arg Pro Thr Arg Thr Gly Ala Gln Gly
 1          5          10          15
Arg Arg Gln Leu Glu Arg Asp Ala Gly Arg Arg Leu Tyr Asp His Asp
          20          25          30
Arg Arg Leu Pro Ala Gly Val Val Leu Arg Pro Leu Gly His Pro Gly
          35          40          45
Gly Arg Gly Pro Cys Arg Leu Ala Arg Ala Gly Gly Gly Arg Ala Gly
          50          55          60
Gly Asp Gly Gly Gln Pro Gly Arg Ala Arg Arg Arg Thr Ala Gly Leu
          65          70          75          80
Ala Gly Ala Gly Asp Arg Pro Ala Gly Leu Arg Gly Arg Arg Arg Gly
          85          90          95
Pro Arg Cys Ile Arg Arg Cys Ala Arg Arg Gly Ala Leu Gly Phe Arg
          100          105          110
Thr

```

<210> 308
 <211> 372
 <212> DNA
 <213> *Pseudomonas aeruginosa*

```

<400> 308
agtgggaatc gccgctgccg gaagaattcc tctggctgct cagcctgttg cgccaggatc 60
gcgaggcggt cgtcggttga acgctggct gacccccgac tggccggcgc cggcccggtg 120
gcgggcctgc gtgaccacgc gcagtggcgg ggtcagccag gcacccttcg acagtctgaa 180
ccttggcgcc cacgtctacg acgatccgcg cgccgtggaa taaaaccgcc gacgcctgac 240
cgagcgtctg gaatgccggc cgagctggtt ggaatagggt cacggagtga cgtggtggag 300
gccgaccgga accggtgctc agggccgacg ccagctggag cgcgatgccg ggcgtcgct 360
gtacgatcat ga 372

```

<210> 309
 <211> 123
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 309
Ser Gly Asn Arg Arg Cys Arg Lys Asn Ser Ser Gly Cys Ser Ala Cys
 1          5          10          15
Cys Ala Arg Ile Ala Arg Arg Ser Ser Val Glu Arg Leu Ala Asp Pro
          20          25          30
Arg Leu Ala Gly Ala Gly Pro Cys Ala Gly Leu Arg Asp His Ala Gln
          35          40          45
Trp Arg Gly Gln Pro Gly Thr Leu Arg Gln Ser Glu Pro Trp Arg Pro
          50          55          60
Arg Leu Arg Arg Ser Ala Arg Arg Gly Ile Lys Pro Pro Thr Pro Asp

```

65					70				75					80	
Arg	Ala	Ser	Gly	Met	Pro	Ala	Glu	Leu	Val	Gly	Ile	Gly	Ala	Arg	Ser
				85					90					95	
Asp	Val	Val	Glu	Ala	Asp	Pro	Asn	Arg	Cys	Ser	Gly	Pro	Thr	Pro	Ala
			100					105					110		
Gly	Ala	Arg	Cys	Arg	Ala	Ser	Pro	Val	Arg	Ser					
		115					120								

<400>		310					
caagccccgcc	ggccttggtg	tccatccggc	tgccggcccat	caggacggga	ccctgctgaa		60
tgccttgtct	taccatgtcc	cggacatcg	caatgtgccg	cgcgccggga	tcgtcccaccg		120
cctggacaag	gacacgacct	gcctgatggt	agtggccaag	acgctggagg	cccacacca		180
gctggtggcg	caactgcagg	cacggtcggt	cagccgcata	tacgaggcga	tcgtgatcgg		240
cgtgatcac	tccggcgcca	ccatcgatgc	gccgatcgga	cggcatggcg	tcgacggcca		300
gaagatggcg	gtggctcgag	cgggcaaggt	ggcggtcagc	cattaccgcg	tgctggaacg		360
cttccgtgcg	cacacccata	cccgggtcaa	gctggagacc	gggcgtaccc	accagatccg		420
cgtgcacatg	agccatat	gctatccct	ggtcggcgat	ccggtctacg	gtggggcgctt		480
caggattccc	ccggtggcca	gccagacct	ggtccagact	cttcgcgaat	tcccccgcca		540
ggcgctgcac	gcgcgcttcc	tcgaactgga	tcacccggcc	accggcgctgc	gcatgaagtg		600
ggaatcgccg	ctgccggaag	aattcctctg	gctgctcage	ctgttgccgc	aggatcgcgga		660
ggcgttcgte	ggttgaacgc	ctggctgacc	cccgatggc	cggcgccggc	ccgtgtgcgg		720
gcctgctgca	ccacgcgcag	tggcggggtc	agccaggcac	ccttcgcacag	tctgaacctt		780
ggcgcccacg	tctacgcaga	tccgcgcgcc	gtggaataa				819

<400>	311														
Gln	Ala	Arg	Arg	Pro	Gly	Gly	Pro	Ser	Gly	Cys	Arg	Pro	Ser	Gly	Arg
1				5					10					15	
His	Pro	Ala	Glu	Cys	Leu	Ala	Leu	Pro	Cys	Pro	Gly	His	Arg	Gln	Cys
			20					25					30		
Ala	Ala	Arg	Arg	Asp	Arg	Pro	Pro	Gly	Gln	Gly	His	Asp	Arg	Pro	
		35					40				45				
Asp	Gly	Ser	Gly	Gln	Asp	Ala	Gly	Gly	Pro	His	Gln	Ala	Gly	Gly	Ala
	50					55					60				
Thr	Ala	Gly	Thr	Val	Gly	Gln	Pro	His	Leu	Arg	Gly	Asp	Arg	Asp	Arg
65					70					75					80
Arg	Asp	His	Leu	Arg	Arg	His	His	Arg	Cys	Ala	Asp	Arg	Thr	Ala	Trp
				85					90					95	
Arg	Ala	Ala	Ala	Glu	Asp	Gly	Gly	Gly	Arg	Arg	Arg	Gln	Gly	Gly	Gly
			100					105					110		
Gln	Pro	Leu	Pro	Arg	Ala	Gly	Thr	Leu	Pro	Cys	Ala	His	Pro	Tyr	Pro
		115					120					125			
Gly	Gln	Ala	Gly	Asp	Arg	Ala	Tyr	Pro	Pro	Asp	Pro	Arg	Ala	His	Glu
	130					135					140				
Pro	Tyr	Trp	Leu	Ser	Pro	Gly	Arg	Arg	Ser	Gly	Leu	Arg	Trp	Ala	Leu
145				150						155					160
Gln	Asp	Ser	Pro	Gly	Gln	Pro	Asp	Pro	Gly	Pro	Asp	Ser	Ser	Ser	Arg
				165				170						175	
Ile	Pro	Pro	Ala	Gly	Ala	Ala	Arg	Ala	Leu	Pro	Arg	Thr	Gly	Ser	Pro

<400> 315
Pro Gln Arg Val Ala Asp Ser Lys Ser Arg Ala Glu His Arg Leu Leu
1 5 10 15
Leu Met Ser Asp Met Ile Gln Arg Ala Ala Glu Val Pro Phe Glu Leu
20 25 30
Gly Gly Gln Arg Leu Asp Gln Ile Ala Ala Gln Leu Phe Pro Glu His
35 40 45
Ser Arg Ser Arg Leu Ala Gly Trp Ile Lys Asp Gly Arg Leu Thr Val
50 55 60
Asp Gly Ala Val Leu Arg Pro Arg Asp Ile Val His Ser Gly Ala Gln
65 70 75 80
Leu Val Leu Glu Ala Glu Gln Glu Ala Gln Gly Glu Trp Leu Ala Gln
85 90 95
Asp Ile Glu Leu Glu Ile Val Tyr Glu Asp Glu His Ile Leu Val Ile
100 105 110
Asp Lys Pro Ala Gly Leu Val Val His Pro Ala Ala Gly His Gln Asp
115 120 125
Gly Thr Leu Leu Asn Ala Leu Leu Tyr His Val Pro Asp Ile Ala Asn
130 135 140
Val Pro Arg Ala Gly Ile Val His Arg Leu Asp Lys Asp Thr Thr Gly
145 150 155 160
Leu Met Val Val Ala Lys Thr Leu Glu Ala His Thr Lys Leu Val Ala
165 170 175
Gln Leu Gln Ala Arg Ser Val Ser Arg Ile Tyr Glu Ala Ile Val Ile
180 185 190
Gly Val Ile Thr Ser Gly Gly Thr Ile Asp Ala Pro Ile Gly Arg His
195 200 205
Gly Val Gln Arg Gln Lys Met Ala Val Val Asp Ala Gly Lys Val Ala
210 215 220
Val Ser His Tyr Arg Val Leu Glu Arg Phe Arg Ala His Thr His Thr
225 230 235 240
Arg Val Lys Leu Glu Thr Gly Arg Thr His Gln Ile Arg Val His Met
245 250 255
Ser His Ile Gly Tyr Pro Leu Val Gly Asp Pro Val Tyr Gly Gly Arg
260 265 270
Phe Arg Ile Pro Pro Val Ala Ser Gln Thr Leu Val Gln Thr Leu Arg
275 280 285
Glu Phe Pro Arg Gln Ala Leu His Ala Arg Phe Leu Glu Leu Asp His
290 295 300
Pro Ala Thr Gly Val Arg Met Lys Trp Glu Ser Pro Leu Pro Glu Glu
305 310 315 320
Phe Leu Trp Leu Leu Ser Leu Leu Arg Gln Asp Arg Glu Ala Phe Val
325 330 335
Gly

<210> 316
<211> 378
<212> DNA
<213> Pseudomonas aeruginosa

<400> 316
ccgaccgtgc ctgcagttgc gccaccagct tgggtgtgggc ctccagcgctc ttggccacta 60
ccatcaggcc ggtcgtgtcc ttgtccaggc ggtggacgat cccggcgcg cgcacattgg 120
cgatgtccgg gacatggtag agcaaggcat tcagcagggt gccgtcctga tggccggcag 180
ccggatggac caccaggccg gcgggcttgt caatcaccag gatgtgctcg tcctcgtaga 240
cgatttccag ctcgatgtcc tgtgcgagcc actgcacctg ggcttctctg tcggcctcca 300
ggaccagttg cgcgccgctg tggacgatgt cgcgcggg cagcacggcg ccgtcgacgg 360

tcaggcgacc gtccttga

378

<210> 317
<211> 125
<212> PRT
<213> Pseudomonas aeruginosa

<400> 317
Pro Thr Val Pro Ala Val Ala Pro Pro Ala Trp Cys Gly Pro Pro Ala
1 5 10 15
Ser Trp Pro Leu Pro Ser Gly Arg Ser Cys Pro Cys Pro Gly Gly Gly
20 25 30
Arg Ser Arg Arg Ala Ala His Trp Arg Cys Pro Gly His Gly Arg Ala
35 40 45
Arg His Ser Ala Gly Cys Arg Pro Asp Gly Arg Gln Pro Asp Gly Pro
50 55 60
Pro Gly Arg Arg Ala Cys Gln Ser Pro Gly Cys Ala Arg Pro Arg Arg
65 70 75 80
Arg Phe Pro Ala Arg Cys Pro Val Arg Ala Thr Arg Pro Gly Leu Pro
85 90 95
Ala Arg Pro Pro Gly Pro Val Ala Arg Arg Cys Gly Arg Cys Arg Ala
100 105 110
Gly Ala Ala Arg Arg Arg Arg Arg Ser Gly Asp Arg Pro
115 120 125

<210> 318
<211> 303
<212> DNA
<213> Pseudomonas aeruginosa

<400> 318
gcacgtctc ctactcatgt ccgatatgat tcaacgcgcg gccgaggtgc cgttcgagct 60
gggtggccag cgtctcgacc agatcgccgc ccagcttttt cccgaacact cccgctcccg 120
tctggccggc tggatcaagg acggtcgcct gaccgtcgac ggcgccgtgc tgcgcccgcg 180
cgacatcgtc cacagcggcg cgcaactggc cctggaggcc gagcaggaag cccagggcga 240
gtggctcgca caggacatcg agctggaaat cgtctacgag gacgagcaca tcctggtgat 300
tga 303

<210> 319
<211> 100
<212> PRT
<213> Pseudomonas aeruginosa

<400> 319
Ala Ser Ser Pro Thr His Val Arg Tyr Asp Ser Thr Arg Gly Arg Gly
1 5 10 15
Ala Val Arg Ala Gly Trp Pro Ala Ser Arg Pro Asp Arg Arg Pro Ala
20 25 30
Phe Ser Arg Thr Leu Pro Leu Pro Ser Gly Arg Leu Asp Gln Gly Arg
35 40 45
Ser Pro Asp Arg Arg Arg Arg Arg Ala Ala Pro Ala Arg His Arg Pro
50 55 60
Gln Arg Arg Ala Thr Gly Pro Gly Gly Arg Ala Gly Ser Pro Gly Arg
65 70 75 80
Val Ala Arg Thr Gly His Arg Ala Gly Asn Arg Leu Arg Gly Arg Ala
85 90 95
His Pro Gly Asp
100

<210> 320
 <211> 1590
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 320
 tcttccagtt cgctggagat cagcaggacc agtaccaggc cgatggtcag gcggtacagg 60
 tggtagacac ggaggatgag ttgcccctgc tcctcgtca gccgtagccg ttcagcgccg 120
 acggtcgcgc tggctcctggc gcagggtgag ctggctgcaa taccagcggt gttcgtgggc 180
 gagggcggtg gcctgcggca cgtggacgcc gcaatgggag cagcggacca tcggcgatgc 240
 gctcggctcg tcctgcggac gttgctgctg gcgcggagtg ggacgggtaa agcgacgcca 300
 gagccagaac gcgatggcga tcaggggcga ccagaacagg aggcggaaaa ggcccatggt 360
 gatctcggag gctggagaaa gctgcagttt agccaagccg ccggctcgat cccagacggg 420
 aaggtccagg ctgtgcggcg tttggcgctg ggagaggcat ggcggcgggc aaaaagaagg 480
 gaggcctgag cctcccttcg gtgtttctg cgatcagtcg aagagaccga aggtcatgta 540
 gctccaccag gagcgaccgg agtcctcgtc gtcacgctc tccggcttct cgtcgtcggc 600
 gctgtgatcc tggttttccg gcttcagttc ggcggggagc tcccgctcgg catcctcgta 660
 ctgcttgatc acgtccttgg cggcctgggt ttccatgtgc ggcggcggct cgcgccttc 720
 gatcaggccc aggggtggcct tggccagcca ggagcgggtg tcggcctcgc tttcgcgggc 780
 gacgaactcg ccatacctga ggctggcggt atccggatag ttcagcttga gggtttccag 840
 gctgggtgctg gccaggctgt cgagaccag gcgacggtag gcttcgacca tgatcgccag 900
 gccatcgccg acggccgggg tttcctggaa gttctccacc acgtagcgac cgcggttggc 960
 ggcggcgaca taggcctggc gcttcaggta gtagtggccg acgtgcactt cgtaggccgc 1020
 cagcagggtg cgcaggatca ccatgcgcgc cttggcgtcc ggggcgtagc ggctgttggg 1080
 gaagcggctg gtgagctggg cgaactcgtt gaaggagtcg cgggcggcgc ccgggtcgcg 1140
 cttggtcatg tccagcggca ggaagcgcgc cagcaggccg cggtcctggt cgaaggagga 1200
 caggcctttg aggtagtagg cgtagtcgac gttggggtag tgcggatgca ggcgatgaa 1260
 gcgttcggcg gcggcgcggg cggcttcggg ctccatgttc ttgtagttag cgtagatcag 1320
 ctcgagctgg gcctgctcgg cgtagcggcc gaagggatag cgcgattcga gggctttcag 1380
 cttggtgacg gcgctgttgt agctcttgtt gttgaggtcg tcctgcgcct gctggtacag 1440
 ctggctctcg ctcaggttct cgtcgacagt ctcctgttgc gaggagcagg ctgcggtagg 1500
 ggcgaggatg gcgatcagca gcagggtgtt cacttgcatg gcggcttgag tccctgggac 1560
 ggtcggcttg gcctcaaccg tctgttatga 1590

<210> 321
 <211> 529
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 321
 Ser Ser Ser Ser Leu Glu Ile Ser Arg Thr Ser Thr Arg Pro Met Val
 1 5 10 15
 Arg Arg Tyr Arg Trp Tyr Arg Arg Arg Met Arg Cys Pro Cys Ser Ser
 20 25 30
 Leu Ser Arg Ser Arg Ser Ala Arg Thr Val Ala Leu Val Leu Ala Gln
 35 40 45
 Val Arg Leu Ala Ala Ile Pro Ala Leu Phe Val Gly Glu Gly Val Gly
 50 55 60
 Leu Arg His Val Asp Ala Ala Met Gly Ala Ala Asp His Arg Arg Cys
 65 70 75 80
 Ala Arg Leu Val Leu Arg Thr Leu Leu Leu Ala Arg Ser Gly Thr Gly
 85 90 95
 Lys Ala Thr Pro Glu Pro Glu Arg Asp Gly Asp Gln Gly Asp Pro Glu
 100 105 110
 Gln Glu Ala Glu Lys Ala His Gly Asp Leu Gly Gly Trp Arg Lys Leu
 115 120 125
 Gln Phe Ser Gln Ala Ala Gly Ser Ile Pro Asp Gly Lys Val Gln Ala
 130 135 140

Val	Arg	Arg	Leu	Ala	Leu	Gly	Glu	Ala	Trp	Arg	Arg	Ala	Lys	Arg	Arg
145					150					155					160
Glu	Ala	Cys	Ala	Ser	Leu	Arg	Cys	Phe	Val	Arg	Ser	Val	Glu	Glu	Thr
				165					170						175
Glu	Gly	His	Val	Ala	Pro	Pro	Gly	Ala	Thr	Gly	Val	Leu	Val	Val	Ile
			180					185					190		
Ala	Leu	Arg	Leu	Leu	Val	Val	Gly	Ala	Val	Ile	Leu	Val	Phe	Arg	Leu
		195					200					205			
Gln	Phe	Gly	Gly	Asp	Leu	Pro	Leu	Gly	Ile	Leu	Val	Leu	Leu	Asp	His
	210				215						220				
Val	Leu	Gly	Gly	Leu	Gly	Phe	His	Val	Arg	Arg	Arg	Leu	Ala	Ala	Phe
225					230				235						240
Asp	Gln	Ala	Gln	Gly	Gly	Leu	Gly	Gln	Pro	Gly	Ala	Gly	Val	Gly	Leu
			245						250					255	
Ala	Phe	Ala	Gly	Asp	Glu	Leu	Ala	Ile	Leu	Glu	Ala	Gly	Val	Ile	Arg
			260					265					270		
Ile	Val	Gln	Leu	Glu	Gly	Phe	Gln	Ala	Gly	Ala	Gly	Gln	Val	Val	Glu
		275					280					285			
Thr	Gln	Ala	Thr	Val	Gly	Phe	Asp	His	Asp	Arg	Gln	Ala	Ile	Ala	Asp
	290				295						300				
Gly	Arg	Gly	Phe	Leu	Glu	Val	Leu	His	His	Val	Ala	Thr	Ala	Val	Gly
305					310					315					320
Gly	Gly	Asp	Ile	Gly	Leu	Ala	Leu	Gln	Val	Val	Val	Ala	Asp	Val	His
			325						330					335	
Phe	Val	Gly	Arg	Gln	Gln	Val	Ala	Gln	Val	His	His	Ala	Arg	Leu	Gly
			340					345					350		
Val	Arg	Gly	Val	Ala	Ala	Val	Gly	Glu	Ala	Ala	Gly	Glu	Leu	Gly	Glu
		355					360					365			
Leu	Val	Glu	Gly	Val	Ala	Gly	Gly	Ala	Arg	Val	Ala	Leu	Gly	His	Val
		370				375					380				
Gln	Arg	Gln	Glu	Ala	Arg	Gln	Gln	Ala	Ala	Val	Leu	Val	Glu	Gly	Gly
385					390					395					400
Gln	Ala	Phe	Glu	Val	Val	Gly	Val	Val	Asp	Val	Gly	Val	Leu	Arg	Met
			405						410					415	
Gln	Ala	Asp	Glu	Ala	Phe	Gly	Gly	Gly	Ala	Gly	Gly	Phe	Gly	Leu	His
			420					425					430		
Val	Leu	Val	Val	Gly	Val	Asp	Gln	Leu	Glu	Leu	Gly	Leu	Leu	Gly	Val
		435					440					445			
Ala	Ala	Glu	Gly	Ile	Ala	Arg	Phe	Glu	Gly	Phe	Gln	Leu	Gly	Asp	Gly
		450				455					460				
Ala	Val	Val	Ala	Leu	Val	Val	Glu	Val	Val	Leu	Arg	Leu	Leu	Val	Gln
465					470					475					480
Leu	Ala	Leu	Ala	Gln	Val	Leu	Val	Asp	Ser	Leu	Leu	Val	Arg	Gly	Ala
			485						490					495	
Gly	Cys	Gly	Glu	Gly	Glu	Asp	Gly	Asp	Gln	Gln	Gln	Val	Phe	His	Leu
			500					505					510		
His	Gly	Gly	Leu	Arg	Pro	Trp	Asp	Gly	Arg	Leu	Gly	Leu	Asn	Arg	Leu
		515					520					525			

Leu

<210> 322

<211> 1071

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 322

cagacggttg aggccaagcc gaccgtccca gggacgcaag ccgcatgca agtgaaacac

60

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ctgctgctga tgcgccatcct cgccctcacc gcagcctgct cctcgaacaa ggagactgtc 120
gacgagaacc tgagcgagag ccagctgtac cagcaggcgc aggacgacct caacaacaag 180
agctacaaca gcgccgtcac caagctgaaa gccctcgaat cgcgctatcc cttcggccgc 240
tacgccgagc agggccagct cgagctgata tacgccaaact acaagaacat ggagcccga 300
gccgcccgcg ccgcccgcga acgcttcata cgctgcatc cgcagcacc ccaacgtcgc 360
tacgcctact acctcaaagg cctgtcctcc ttcgaccagg accgcggcct gctggcgcg 420
ttcctgccgc tggacatgac caagcgcgac ccggggcgccg cccgcgactc cttcaacgag 480
ttcgcccagc tcaccagccg cttccccaac agccgctacg ccccgagcgc caaggcgcgc 540
atggtgtacc tgcgcaacct gctggcggcc tacgaagtgc acgtcggcca ctactacctg 600
aagcgccagg cctatgtcgc cgccgccaac cgcggtcgct acgtggtgga gaacttccag 660
gaaaccccg cgtcggcga tggcctggcg atcatggctg aagcctaccg tcgcctgggt 720
ctcgacgacc tggccagcac cagcctggaa accctcaagc tgaactatcc ggataacgcc 780
agcctcaagg atggcgagtt cgtcgccgcg gaaagcgagg ccgacaccgc ctctgggctg 840
gccaaggcca ccctgggcct gatcgaaggc ggcgagccgc cgccgcacat ggaaaccag 900
gccgccaagg acgtgatcaa gcagtacgag gatgccgagc gggagatccc cgccgaactg 960
aagccgaaa accaggatca cagcgccgac gacgagaagc cggagagcga tgacgacgag 1020
gactccggtc gtcctggtg gagctacatg accttcggtc tcttcgactg a 1071

```

<210> 323

<211> 356

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 323

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Gln Thr Val Glu Ala Lys Pro Thr Val Pro Gly Thr Gln Ala Ala Met
1      5      10      15
Gln Val Lys His Leu Leu Leu Ile Ala Ile Leu Ala Leu Thr Ala Ala
20      25      30
Cys Ser Ser Asn Lys Glu Thr Val Asp Glu Asn Leu Ser Glu Ser Gln
35      40      45
Leu Tyr Gln Gln Ala Gln Asp Asp Leu Asn Asn Lys Ser Tyr Asn Ser
50      55      60
Ala Val Thr Lys Leu Lys Ala Leu Glu Ser Arg Tyr Pro Phe Gly Arg
65      70      75      80
Tyr Ala Glu Gln Ala Gln Leu Glu Leu Ile Tyr Ala Asn Tyr Lys Asn
85      90      95
Met Glu Pro Glu Ala Ala Arg Ala Ala Glu Arg Phe Ile Arg Leu
100     105
His Pro Gln His Pro Asn Val Asp Tyr Ala Tyr Tyr Leu Lys Gly Leu
115     120     125
Ser Ser Phe Asp Gln Asp Arg Gly Leu Leu Ala Arg Phe Leu Pro Leu
130     135     140
Asp Met Thr Lys Arg Asp Pro Gly Ala Ala Arg Asp Ser Phe Asn Glu
145     150     155     160
Phe Ala Gln Leu Thr Ser Arg Phe Pro Asn Ser Arg Tyr Ala Pro Asp
165     170     175
Ala Lys Ala Arg Met Val Tyr Leu Arg Asn Leu Leu Ala Ala Tyr Glu
180     185     190
Val His Val Gly His Tyr Tyr Leu Lys Arg Gln Ala Tyr Val Ala Ala
195     200     205
Ala Asn Arg Gly Arg Tyr Val Val Glu Asn Phe Gln Glu Thr Pro Ala
210     215     220
Val Gly Asp Gly Leu Ala Ile Met Val Glu Ala Tyr Arg Arg Leu Gly
225     230     235     240
Leu Asp Asp Leu Ala Ser Thr Ser Leu Glu Thr Leu Lys Leu Asn Tyr
245     250     255
Pro Asp Asn Ala Ser Leu Lys Asp Gly Glu Phe Val Ala Arg Glu Ser
260     265     270
Glu Ala Asp Thr Arg Ser Trp Leu Ala Lys Ala Thr Leu Gly Leu Ile

```


Lys Arg Pro Lys Val Met
180

<210> 328
<211> 402
<212> DNA
<213> Pseudomonas aeruginosa

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<400> 328
tcgcacgaaa caccgaaggg aggcgcaggc ctcccttctt tttgcccgcc gccatgcctc      60
tcccagcgcc aaacgccgca cagcctggac cttcccgtct gggatcgagc cggcggcttg      120
gctaaactgc agctttctcc agcctccgag atcaccatgg gccttttccg cctcctgttc      180
tggatcgccc tgatcgccat cgcgttctgg ctctggcgct gctttaccgg tcccactccg      240
cgccagcagc aacgtccgca ggacgagccg agcgcacgcg cgatgggtccg ctgcgccccat      300
tgcggcgtcc acgtgccgca ggccaacgcc ctgcgccacg aacaacgctg gtattgcagc      360
caggcgcacc tgcgccagga ccaggggcgac cgtgcgcgct ga                          402
```

<210> 329
<211> 133
<212> PRT
<213> Pseudomonas aeruginosa

```
<400> 329
Ser His Glu Thr Pro Lys Gly Gly Ala Gly Leu Pro Ser Phe Cys Pro
 1          5          10          15
Pro Pro Cys Leu Ser Gln Arg Gln Thr Pro His Ser Leu Asp Leu Pro
 20          25          30
Val Trp Asp Arg Ala Gly Gly Leu Ala Lys Leu Gln Leu Ser Pro Ala
 35          40          45
Ser Glu Ile Thr Met Gly Leu Phe Arg Leu Leu Phe Trp Ile Ala Leu
 50          55          60
Ile Ala Ile Ala Phe Trp Leu Trp Arg Arg Phe Thr Arg Pro Thr Pro
 65          70          75          80
Arg Gln Gln Gln Arg Pro Gln Asp Glu Pro Ser Ala Ser Pro Met Val
 85          90          95
Arg Cys Ala His Cys Gly Val His Val Pro Gln Ala Asn Ala Leu Ala
 100         105         110
His Glu Gln Arg Trp Tyr Cys Ser Gln Ala His Leu Arg Gln Asp Gln
 115         120         125
Gly Asp Arg Ala Arg
130
```

<210> 330
<211> 1791
<212> DNA
<213> Pseudomonas aeruginosa

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<400> 330
tcgccatcgc gttctggctc tggcgtcgct ttaccctgcc cactccgcgc cagcagcaac      60
gtccgcagga cgagccgagc gcatcgccga tggtcgcgtg cgccattgc ggcgtccacg      120
tgccgcaggc caacgccctc gccacgaac aacgctggta ttgcagccag gcgcacctgc      180
gccaggacca gggcgaccgt gcgcgctgaa cggctacggc tgagcgagga gcaggggcaa      240
cgcatectcc gtctgtacca cctgtaccgc ctgaccatcg gcctgggtact ggtcctgctg      300
atctccagcg aactggaaga tcaggtcctc aagctcgtcc accctgaact gttccatgtc      360
ggcagttggt gctacctggt cttcaacatc ctggtcgcgc tgttcctgcc gccgtcgcgg      420
caattgctgc cgatcttcat cctcgcgctc accgacgtgc tgatgctttg cggcctgttc      480
tacgcaggtg gcggcgtacc cagcggcatc ggcagcctgc tggtggtggc ggtggccatt      540
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gccaacatcc	tgctgcgcgg	gcgcatcggc	ctgggtcatcg	cggcgggcggc	cagcctcggc	600
ctgctctacc	tgaccttctt	cctcagcctg	agcagtcgcg	acgccacca	ccactacgtc	660
caggcgccgg	gcctcggcac	cctgtgcttc	gccgcgcgcg	tggtgatcca	ggctctgggtg	720
cggcgccagg	agcagaccga	aacgctggcc	gaagaacgcg	ccgagacggt	cgccaacctg	780
gaggaactca	acgcattgat	cctgcagcgc	atgcgcaccg	gcatectcgt	ggtcgatagc	840
cgtcaggcca	tcctcctcgc	caaccaggcc	gccctcggcc	tgctcaggca	ggacgacgtg	900
cagggcgcca	gcctcggccg	ccacagcccg	atgctgatgc	actgcatgaa	gcaatggcgc	960
ctgaatccca	gcctccgtcc	gccgacgctc	aaggtgggtg	cggatggccc	gacggtgcaa	1020
cccagcttta	tcagcctcaa	ccgcgaagac	gaccagcacg	tgctgatctt	cctcgaagac	1080
atttcgcaga	tcgcccagca	ggcgagcag	atgaagctgg	ccggtcttgg	ccgcctgacc	1140
gccggcatcg	cccattgagat	ccgcaaccgg	ctggggcgca	tcagccacgc	cgcccaactg	1200
ctgcaggagt	cagaggaact	ggatgccccg	gaccgacgcc	tgacgcagat	catccaggac	1260
cagtcgaagc	ggatgaacct	ggtcacgcag	aacgtcctgc	agctctcccg	tcgccgccag	1320
gccgaaccgc	agcagctcga	cctgaaggag	tggtctcagc	ggttcgtcga	cgaatacccc	1380
ggcaggctgc	gcaacgacag	ccaactgcac	ctgcagctcg	gtgccggcga	catccagacc	1440
cgcatggacc	cacaccagtt	gaaccagggtg	ctgagcaacc	tggtgcagaa	cggtcttcgc	1500
tacagcgccc	aggcgacagc	gcgcggccag	gtctgggtga	gcctcgcgcg	cgacccggag	1560
agcgacctgc	cgggtgctgga	agtcacgcac	gacgggtccc	gcgtaccggc	ggacaaactg	1620
aacaacctgt	tcgaaccctt	ctttactaca	gaaagcaaag	gcaccggcct	gggcctctat	1680
ctctcccgcg	aactctgcga	gagcaaccag	gcacggatcg	actaccgcaa	tcgcgaggaa	1740
ggcgggcggt	gcttccgcat	caccttcgcc	caccgcgcga	aactcagctg	a	1791

<210> 331
 <211> 596
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 331

Ser	Pro	Ser	Arg	Ser	Gly	Ser	Gly	Val	Ala	Leu	Pro	Val	Pro	Leu	Arg
1				5					10					15	
Ala	Ser	Ser	Asn	Val	Arg	Arg	Thr	Ser	Arg	Ala	His	Arg	Arg	Trp	Ser
			20					25					30		
Ala	Ala	Pro	Ile	Ala	Ala	Ser	Thr	Cys	Arg	Arg	Pro	Thr	Pro	Ser	Pro
		35					40					45			
Thr	Asn	Asn	Ala	Gly	Ile	Ala	Ala	Arg	Arg	Thr	Cys	Ala	Arg	Thr	Arg
	50				55						60				
Ala	Thr	Val	Arg	Ala	Glu	Arg	Leu	Arg	Leu	Ser	Glu	Glu	Gln	Gly	Gln
65					70				75					80	
Arg	Ile	Leu	Arg	Leu	Tyr	His	Leu	Tyr	Arg	Leu	Thr	Ile	Gly	Leu	Val
			85					90					95		
Leu	Val	Leu	Leu	Ile	Ser	Ser	Glu	Leu	Glu	Asp	Gln	Val	Leu	Lys	Leu
			100					105					110		
Val	His	Pro	Glu	Leu	Phe	His	Val	Gly	Ser	Trp	Cys	Tyr	Leu	Val	Phe
		115					120					125			
Asn	Ile	Leu	Val	Ala	Leu	Phe	Leu	Pro	Pro	Ser	Arg	Gln	Leu	Leu	Pro
	130					135					140				
Ile	Phe	Ile	Leu	Ala	Leu	Thr	Asp	Val	Leu	Met	Leu	Cys	Gly	Leu	Phe
145					150				155					160	
Tyr	Ala	Gly	Gly	Gly	Val	Pro	Ser	Gly	Ile	Gly	Ser	Leu	Leu	Val	Val
			165						170					175	
Ala	Val	Ala	Ile	Ala	Asn	Ile	Leu	Leu	Arg	Gly	Arg	Ile	Gly	Leu	Val
			180				185						190		
Ile	Ala	Ala	Ala	Ala	Ser	Leu	Gly	Leu	Leu	Tyr	Leu	Thr	Phe	Phe	Leu
		195					200					205			
Ser	Leu	Ser	Ser	Pro	Asp	Ala	Thr	Asn	His	Tyr	Val	Gln	Ala	Gly	Gly
	210					215					220				
Leu	Gly	Thr	Leu	Cys	Phe	Ala	Ala	Ala	Leu	Val	Ile	Gln	Ala	Leu	Val
225					230					235				240	
Arg	Arg	Gln	Glu	Gln	Thr	Glu	Thr	Leu	Ala	Glu	Glu	Arg	Ala	Glu	Thr


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ggcctgacgg ctatcgacca cgaggatgcc ggtgcgcatg cgctgcagga tcaatgcggt 420
gagttcctcc aggttggcga ccgtctcggc gcgttcttcg gccagcggtt cggctctgctc 480
ctggcgccgc accagagcct ggatcaccag cgcggcggcg aagcacaggg tgccgaggcc 540
gccggcctgg acgtagtggg ttgtggcgctc cggactgctc aggttgagga agaaggctcag 600
gtagagcagg ccgaggctgg ccgccgccgc gatgaccagg ccgatgcgcc cgcgagcag 660
gatgttggca atggccaccg ccaccaccag caggctgccg atgccgctgg gtacgccgcc 720
acctgcgtag aacaggccgc aaagcatcag cacgtcggtg agcgcgagga tgaagatcgg 780
cagcaattgc cgcgacggcg gcaggaacag cgcgaccagg atgttgaaga ccaggtagca 840
ccaactgccg acatggaaca gttcagggtg gacgagcttg aggacctgat cttccagttc 900
gctggagatc agcaggacca gtaccaggcc gatggtcagg cggtacaggt ggtacagacg 960
gaggatgcgt tgccctgct cctcgctcag ccgtag 996

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<210> 333
 <211> 331
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 333

Leu	Leu	Gln	Gln	Leu	Gly	Gly	Val	Ala	Asp	Arg	Ala	Gln	Arg	Val	Ala
1				5					10					15	
Asp	Leu	Met	Gly	Asp	Ala	Gly	Gly	Gln	Ala	Ala	Lys	Thr	Gly	Gln	Leu
			20					25					30		
His	Leu	Leu	Arg	Leu	Leu	Gly	Asp	Leu	Arg	Asn	Val	Phe	Glu	Glu	Asp
			35				40					45			
Gln	His	Val	Leu	Val	Val	Phe	Ala	Val	Glu	Ala	Asp	Lys	Ala	Gly	Leu
			50			55					60				
His	Arg	Arg	Ala	Ile	Arg	His	His	Leu	Glu	Arg	Arg	Arg	Thr	Glu	Ala
65					70					75					80
Gly	Ile	Gln	Ala	Pro	Leu	Leu	His	Ala	Val	His	Gln	His	Arg	Ala	Val
				85				90						95	
Ala	Ala	Glu	Ala	Gly	Ala	Leu	His	Val	Val	Leu	Pro	Glu	Gln	Ala	Glu
			100					105					110		
Gly	Gly	Leu	Val	Gly	Glu	Glu	Asp	Gly	Leu	Thr	Ala	Ile	Asp	His	Glu
			115				120					125			
Asp	Ala	Gly	Ala	His	Ala	Leu	Gln	Asp	Gln	Cys	Val	Glu	Phe	Leu	Gln
			130			135					140				
Val	Gly	Asp	Arg	Leu	Gly	Ala	Phe	Phe	Gly	Gln	Arg	Phe	Gly	Leu	Leu
145					150					155					160
Leu	Ala	Pro	His	Gln	Ser	Leu	Asp	His	Gln	Arg	Gly	Gly	Glu	Ala	Gln
				165					170					175	
Gly	Ala	Glu	Ala	Ala	Gly	Leu	Asp	Val	Val	Val	Gly	Gly	Val	Arg	Thr
			180				185						190		
Ala	Gln	Ala	Glu	Glu	Glu	Gly	Gln	Val	Glu	Gln	Ala	Glu	Ala	Gly	Arg
			195				200					205			
Arg	Arg	Asp	Asp	Gln	Ala	Asp	Ala	Pro	Ala	Gln	Gln	Asp	Val	Gly	Asn
					215						220				
Gly	His	Arg	His	His	Gln	Gln	Ala	Ala	Asp	Ala	Ala	Gly	Tyr	Ala	Ala
225					230					235					240
Thr	Cys	Val	Glu	Gln	Ala	Ala	Lys	His	Gln	His	Val	Gly	Glu	Arg	Glu
				245					250					255	
Asp	Glu	Asp	Arg	Gln	Gln	Leu	Pro	Arg	Arg	Arg	Gln	Glu	Gln	Arg	Asp
			260					265					270		
Gln	Asp	Val	Glu	Asp	Gln	Val	Ala	Pro	Thr	Ala	Asp	Met	Glu	Gln	Phe
			275				280					285			
Arg	Val	Asp	Glu	Leu	Glu	Asp	Leu	Ile	Phe	Gln	Phe	Ala	Gly	Asp	Gln
			290			295					300				
Gln	Asp	Gln	Tyr	Gln	Ala	Asp	Gly	Gln	Ala	Val	Gln	Val	Val	Gln	Thr
305					310					315					320
Glu	Asp	Ala	Leu	Pro	Leu	Leu	Leu	Ala	Gln	Pro					

<210> 334
 <211> 492
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 334
 actgttccat gtcggcagtt ggtgctacct ggtcttcaac atcctggtcg cgctgttcct 60
 gccgccgtcg cggcaattgc tgccgatctt catcctcgcg ctcaccgacg tgctgatgct 120
 ttgcggcctg ttctacgcag gtggcggcgt acccagcggc atcggcagcc tgctggtggt 180
 ggcggtgggc attgccaaca tcctgctgcg cgggcgcgcatc ggcctgggtca tcgcggcgcc 240
 ggccagcctc ggctgctctt acctgacctt cttcctcagc ctgagcagtc cggacgccac 300
 caaccactac gtccaggccg gcggcctcgg caccctgtgc ttcgccgccg cgctggtgat 360
 ccaggctctg gtgcggcgcc aggagcagac cgaaacgctg gccgaagaac gcgccgagac 420
 ggtcgccaac ctggaggaac tcaacgcatt gatcctgcag cgcattgcgca ccggcatcct 480
 cgtggtcgat ag 492

<210> 335
 <211> 163
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 335
 Thr Val Pro Cys Arg Gln Leu Val Leu Pro Gly Leu Gln His Pro Gly
 1 5 10 15
 Arg Ala Val Pro Ala Ala Val Ala Ala Ile Ala Ala Asp Leu His Pro
 20 25 30
 Arg Ala His Arg Arg Ala Asp Ala Leu Arg Pro Val Leu Arg Arg Trp
 35 40 45
 Arg Arg Thr Gln Arg His Arg Gln Pro Ala Gly Gly Gly Gly Gly His
 50 55 60
 Cys Gln His Pro Ala Ala Arg Ala His Arg Pro Gly His Arg Gly Gly
 65 70 75 80
 Gly Gln Pro Arg Pro Ala Leu Pro Asp Leu Leu Pro Gln Pro Glu Gln
 85 90 95
 Ser Gly Arg His Gln Pro Leu Arg Pro Gly Arg Arg Pro Arg His Pro
 100 105 110
 Val Leu Arg Arg Arg Ala Gly Asp Pro Gly Ser Gly Ala Ala Pro Gly
 115 120 125
 Ala Asp Arg Asn Ala Gly Arg Arg Thr Arg Arg Asp Gly Arg Gln Pro
 130 135 140
 Gly Gly Thr Gln Arg Ile Asp Pro Ala Ala His Ala His Arg His Pro
 145 150 155 160
 Arg Gly Arg

<210> 336
 <211> 318
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 336
 ccgtcaggcc atcctcctcg ccaaccaggc cgccctcggc ctgctcaggc aggacgacgt 60
 gcagggcgcc agcctcggcc gccacagccc gatgctgatg cactgcatga agcaatggcg 120
 cctgaatccc agcctcggc cgccgacgct caaggtggtg ccggtatggc cgacggtgca 180
 acccagcttt atcagcctca accgcgaaga cgaccagcac gtgctgatct tcctcgaaga 240

catttcgcag atcgcccagc aggcgcagca gatgaagctg gccggtcttg gccgcctgac 300
cgccggcatc gcccata 318

<210> 337
<211> 105
<212> PRT
<213> Pseudomonas aeruginosa

<400> 337
Pro Ser Gly His Pro Pro Arg Gln Pro Gly Arg Pro Arg Pro Ala Gln
1 5 10 15
Ala Gly Arg Arg Ala Gly Arg Gln Pro Arg Pro Pro Gln Pro Asp Ala
20 25 30
Asp Ala Leu His Glu Ala Met Ala Pro Glu Ser Gln Pro Pro Ser Ala
35 40 45
Asp Ala Gln Gly Gly Ala Gly Trp Pro Asp Gly Ala Thr Gln Leu Tyr
50 55 60
Gln Pro Gln Pro Arg Arg Arg Pro Ala Arg Ala Asp Leu Pro Arg Arg
65 70 75 80
His Phe Ala Asp Arg Pro Ala Gly Ala Ala Asp Glu Ala Gly Arg Ser
85 90 95
Trp Pro Pro Asp Arg Arg His Arg Pro
100 105

<210> 338
<211> 513
<212> DNA
<213> Pseudomonas aeruginosa

<400> 338
agccactcct tcaggtcgag ctgctgcggt tcggcctggc gccgacggga gagctgcagg 60
acgtttctcga tgaccagggt catccgcttc gactggctct ggatgatctg cgtcaggcgt 120
cgtccgggg catccagttc ctctgactcc tgcagcagtt gggcggcgtg gctgatcgcg 180
cccagcgggt tgcggatctc atgggcgatg ccggcgggtca gccggccaag accggccagc 240
ttcatctgct gcgcctgctg ggcatctgc gaaatgtctt cgaggaagat cagcacgtgc 300
tggtcgtctt cgcggttgag gctgataaag ctgggttgca ccgtcgggcc atccggcacc 360
accttgagcg tcggcggacg gaggtctggga ttcaggcgcc attgcttcat gcagtgcac 420
agcatcgggc tgtggcggcc gaggtctggc ccctgcacgt cgtcctgcct gagcaggccg 480
agggcggcct ggttggcgag gaggatggcc tga 513

<210> 339
<211> 170
<212> PRT
<213> Pseudomonas aeruginosa

<400> 339
Ser His Ser Phe Arg Ser Ser Cys Cys Gly Ser Ala Trp Arg Arg Arg
1 5 10 15
Glu Ser Cys Arg Thr Phe Ser Met Thr Arg Phe Ile Arg Phe Asp Trp
20 25 30
Ser Trp Met Ile Cys Val Arg Arg Ser Gly Ala Ser Ser Ser Ser
35 40 45
Asp Ser Cys Ser Ser Trp Ala Ala Trp Leu Ile Ala Pro Ser Gly Leu
50 55 60
Arg Ile Ser Trp Ala Met Pro Ala Val Arg Arg Pro Arg Pro Ala Ser
65 70 75 80
Phe Ile Cys Cys Ala Cys Trp Ala Ile Cys Glu Met Ser Ser Arg Lys
85 90 95

Ile	Ser	Thr	Cys	Trp	Ser	Ser	Ser	Arg	Leu	Arg	Leu	Ile	Lys	Leu	Gly
			100					105					110		
Cys	Thr	Val	Gly	Pro	Ser	Gly	Thr	Thr	Leu	Ser	Val	Gly	Gly	Arg	Arg
		115					120					125			
Leu	Gly	Phe	Arg	Arg	His	Cys	Phe	Met	Gln	Cys	Ile	Ser	Ile	Gly	Leu
	130					135					140				
Trp	Arg	Pro	Arg	Leu	Ala	Pro	Cys	Thr	Ser	Ser	Cys	Leu	Ser	Arg	Pro
145					150					155					160
Arg	Ala	Ala	Trp	Leu	Ala	Arg	Arg	Met	Ala						
				165					170						

<210> 340
 <211> 888
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 340															
gatccgcaac	ccgctggg	cgc	cgatcagcca	cgccgccc	ctgctgcagg	agtcagagga									60
actggatgcc	ccggaccgac	gcctgacgca	gatcatccag	gaccagtcga	agcggatgaa										120
cctgggtcatc	gagaacgtcc	tgacgtcttc	ccgtcgccgc	caggccgaac	cgcagcagct										180
cgacctgaag	gagtggttc	agcggttcgt	cgacgaatac	cccggcaggc	tgcgcaacga										240
cagccaactg	cacctgcagc	tcggtgccgg	cgacatccag	acccgcatgg	accacacca										300
gttgaaccag	gtgctgagca	acctggtgca	gaacggtctt	cgctacagcg	cccaggcgca										360
cgggcgcggc	caggtctggc	tgagcctcgc	gcgcgacccg	gagagcgacc	tgccggtgct										420
ggaagtcatc	gacgacggtc	ccggcggtacc	ggcggaacaaa	ctgaacaacc	tgttcgaacc										480
cttctttact	acagaaagca	aaggcaccgg	cctgggcctc	tatctctccc	gcgaactctg										540
cgagagcaac	caggcacgga	tcgactaccg	caatcgcgag	gaaggcggcg	gctgcttccg										600
catcaccttc	gcccacccgc	gcaaactcag	ctgacggaag	ccgcacgcat	gagccgacaa										660
aaagccctga	tcgtcgacga	tgaaccggat	atccgcgaac	tgctggaaat	cactctcggc										720
cgcataagc	tggacacccg	cagcgccgc	aacgtcaagg	aagccgcgag	ttgctggccc										780
gcgagccgtt	cgacctgtgc	ctcaccgaca	tgcgctgcc	ggacggcagc	ggcctcgatc										840
tggtccagta	catccagcag	cgccatccac	agaccccgtt	ggccatga											888

<210> 341
 <211> 295
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 341															
Asp	Pro	Gln	Pro	Ala	Gly	Arg	Asp	Gln	Pro	Arg	Arg	Pro	Thr	Ala	Ala
1			5					10						15	
Gly	Val	Arg	Gly	Thr	Gly	Cys	Pro	Gly	Pro	Thr	Pro	Asp	Ala	Asp	His
		20						25				30			
Pro	Gly	Pro	Val	Glu	Ala	Asp	Glu	Pro	Gly	His	Arg	Glu	Arg	Pro	Ala
		35				40					45				
Ala	Leu	Pro	Ser	Pro	Pro	Gly	Arg	Thr	Ala	Ala	Ala	Arg	Pro	Glu	Gly
	50					55					60				
Val	Ala	Ser	Ala	Val	Arg	Arg	Arg	Ile	Pro	Arg	Gln	Ala	Ala	Gln	Arg
65				70					75					80	
Gln	Pro	Thr	Ala	Pro	Ala	Ala	Arg	Cys	Arg	Arg	His	Pro	Asp	Pro	His
			85					90					95		
Gly	Pro	Thr	Pro	Val	Glu	Pro	Gly	Ala	Glu	Gln	Pro	Gly	Ala	Glu	Arg
			100					105				110			
Ser	Ser	Leu	Gln	Arg	Pro	Gly	Ala	Arg	Ala	Arg	Pro	Gly	Leu	Ala	Glu
		115				120						125			
Pro	Arg	Ala	Arg	Pro	Gly	Glu	Arg	Pro	Ala	Gly	Ala	Gly	Ser	His	Arg
	130					135					140				
Arg	Arg	Ser	Arg	Arg	Thr	Gly	Gly	Gln	Thr	Glu	Gln	Pro	Val	Arg	Thr

145		150		155		160									
Leu	Leu	Tyr	Tyr	Arg	Lys	Gln	Arg	His	Arg	Pro	Gly	Pro	Leu	Ser	Leu
				165					170					175	
Pro	Arg	Thr	Leu	Arg	Glu	Gln	Pro	Gly	Thr	Asp	Arg	Leu	Pro	Gln	Ser
			180					185					190		
Arg	Gly	Arg	Arg	Arg	Leu	Leu	Pro	His	His	Leu	Arg	Pro	Pro	Ala	Gln
		195					200					205			
Thr	Gln	Leu	Thr	Glu	Ala	Ala	Arg	Met	Ser	Arg	Gln	Lys	Ala	Leu	Ile
	210				215						220				
Val	Asp	Asp	Glu	Pro	Asp	Ile	Arg	Glu	Leu	Leu	Glu	Ile	Thr	Leu	Gly
225					230					235					240
Arg	Met	Lys	Leu	Asp	Thr	Arg	Ser	Ala	Arg	Asn	Val	Lys	Glu	Ala	Ala
			245					250					255		
Ser	Cys	Trp	Pro	Ala	Ser	Arg	Ser	Thr	Cys	Ala	Ser	Pro	Thr	Cys	Ala
		260					265					270			
Cys	Arg	Thr	Ala	Ala	Ala	Ser	Ile	Trp	Ser	Ser	Thr	Ser	Ser	Ser	Ala
		275				280					285				
Ile	His	Arg	Pro	Arg	Trp	Pro									
	290					295									

<210> 342
 <211> 657
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 342																
tttcagcag	ttcgcggata	tccggttcat	cgctcgacgat	cagggcctttt	tgtcggctca											60
tgcgtgcggc	ttccgtcagc	tgagtttgcg	cgggtggcg	aaggtgatgc	ggaagcagcc											120
gccgccttcc	tcgcgattgc	ggtagtcgat	ccgtgcctgg	ttgctctcgc	agagttcgcg											180
ggagagatag	aggcccaggc	cggtgccctt	gctttctgta	gtaaagaagg	gttcgaacag											240
gttggttcagt	ttgtccgccc	gtacgccggg	accgtcgtcg	atgacttcca	gcaccggcag											300
gtcgctctcc	gggtcgcgcg	cgaggctcag	ccagacctgg	ccgcgcccgt	gcgcctgggc											360
gctgtagcga	agaccgttct	gcaccagggt	gctcagcacc	tggttcaact	ggtgtgggtc											420
catgcgggtc	tggatgtcgc	cggcaccgag	ctgcagggtc	agttggctgt	cgttgcgcag											480
cctgccgggg	tattcgtcga	cgaaccgctg	aagccactcc	ttcaggtcga	gctgctgcgg											540
ttcggcctgg	cggcgacggg	agagctgcag	gacgttctcg	atgaccaggt	tcattccgctt											600
cgactgggtc	tggatgatct	gcgtcaggcg	tcgggtccggg	gcattccagtt	cctctga											657

<210> 343
 <211> 218
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 343																
Phe	Pro	Ala	Val	Arg	Gly	Tyr	Pro	Val	His	Arg	Arg	Arg	Ser	Gly	Leu	
1				5					10					15		
Phe	Val	Gly	Ser	Cys	Val	Arg	Leu	Pro	Ser	Ala	Glu	Phe	Ala	Arg	Val	
			20					25					30			
Gly	Glu	Gly	Asp	Ala	Glu	Ala	Ala	Ala	Phe	Leu	Ala	Ile	Ala	Val		
		35				40					45					
Val	Asp	Pro	Cys	Leu	Val	Ala	Leu	Ala	Glu	Phe	Ala	Gly	Glu	Ile	Glu	
	50				55					60						
Ala	Gln	Ala	Gly	Ala	Phe	Ala	Phe	Cys	Ser	Lys	Glu	Gly	Phe	Glu	Gln	
65				70				75						80		
Val	Val	Gln	Phe	Val	Arg	Arg	Tyr	Ala	Gly	Thr	Val	Val	Asp	Asp	Phe	
			85					90					95			
Gln	His	Arg	Gln	Val	Ala	Leu	Arg	Val	Ala	Arg	Glu	Ala	Gln	Pro	Asp	
			100					105					110			

Leu Ala Ala Pro Val Arg Leu Gly Ala Val Ala Lys Thr Val Leu His
 115 120 125
 Gln Val Ala Gln His Leu Val Gln Leu Val Trp Val His Ala Gly Leu
 130 135 140
 Asp Val Ala Gly Thr Glu Leu Gln Val Gln Leu Ala Val Val Ala Gln
 145 150 155 160
 Pro Ala Gly Val Phe Val Asp Glu Pro Leu Lys Pro Leu Leu Gln Val
 165 170 175
 Glu Leu Leu Arg Phe Gly Leu Ala Ala Thr Gly Glu Leu Gln Asp Val
 180 185 190
 Leu Asp Asp Gln Val His Pro Leu Arg Leu Val Leu Asp Asp Leu Arg
 195 200 205
 Gln Ala Ser Val Arg Gly Ile Gln Phe Leu
 210 215

<210> 344
 <211> 300
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 344
 cttccagcac cggcaggtcg ctctccgggt cgcgcgcgag gctcagccag acctggccgc 60
 gcccggtgcg ctgggcgctg tagcgaagac cgttctgcac cagggttgctc agcacctggt 120
 tcaactggtg tgggtccatg cgggtctgga tgtcgccggc accgagctgc aggtgcagtt 180
 ggctgtcggt gcgcagcctg ccgggggtatt cgtcgacgaa ccgctgaagc cactccttca 240
 ggtcgagctg ctgcggttcg gcctggcggc gacgggagag ctgcaggacg ttctcgatga 300

<210> 345
 <211> 99
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 345
 Leu Pro Ala Pro Ala Gly Arg Ser Pro Gly Arg Ala Arg Gly Ser Ala
 1 5 10 15
 Arg Pro Gly Arg Ala Arg Ala Pro Gly Arg Cys Ser Glu Asp Arg Ser
 20 25 30
 Ala Pro Gly Cys Ser Ala Pro Gly Ser Thr Gly Val Gly Pro Cys Gly
 35 40 45
 Ser Gly Cys Arg Arg His Arg Ala Ala Gly Ala Val Gly Cys Arg Cys
 50 55 60
 Ala Ala Cys Arg Gly Ile Arg Arg Arg Thr Ala Glu Ala Thr Pro Ser
 65 70 75 80
 Gly Arg Ala Ala Ala Val Arg Pro Gly Gly Asp Gly Arg Ala Ala Gly
 85 90 95
 Arg Ser Arg

<210> 346
 <211> 375
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 346
 ggcgggttgcc accagctccc gcaagcgacc gaggtcgacc ggtttggtga ggaagtcgaa 60
 ggcaccggcc ttgagcgcct ggatcgcggt gtccaggctg ccgtacgcgg tgatcatggc 120

caccgggggtc	tgtggatggc	gctgctggat	gtactggacc	agatcgaggc	cgctgccgtc	180
cggcaggcgc	atgtcgggtga	ggcacaggctc	gaacgggtcgc	cgggccagca	actcgcggct	240
tccttgacgt	tgcggggcgt	gcgggtgtcc	agcttcacgc	ggccgagagt	gatttcacgc	300
agttcgcgga	tatccggttc	atcgtcgacg	atcagggttc	tttgtcggct	catgcgtgcg	360
gcttccgtca	gctga					375

<210> 347
 <211> 124
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 347
 Gly Gly Cys His Gln Leu Pro Gln Ala Thr Glu Val Asp Arg Phe Gly
 1 5 10 15
 Glu Glu Val Glu Gly Thr Gly Leu Glu Arg Leu Asp Arg Gly Val Gln
 20 25 30
 Ala Ala Val Arg Gly Asp His Gly His Arg Gly Leu Trp Met Ala Leu
 35 40 45
 Leu Asp Val Leu Asp Gln Ile Glu Ala Ala Ala Val Arg Gln Ala His
 50 55 60
 Val Gly Glu Ala Gln Val Glu Arg Leu Ala Gly Gln Gln Leu Ala Ala
 65 70 75 80
 Ser Leu Thr Leu Arg Ala Leu Arg Val Ser Ser Phe Met Arg Pro Arg
 85 90 95
 Val Ile Ser Ser Ser Ser Arg Ile Ser Gly Ser Ser Ser Thr Ile Arg
 100 105 110
 Ala Phe Cys Arg Leu Met Arg Ala Ala Ser Val Ser
 115 120

<210> 348
 <211> 1302
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 348
 accggatatc cgcgaaactgc tggaaatcac tctcggccgc atgaagctgg acaccgcgag 60
 cggccgcaac gtcaaggaag ccgcgagttg ctggccccgc agccgttcga cctgtgcctc 120
 accgacatgc gcctgccgga cggcagcggc ctcgatctgg tccagtacat ccagcagcgc 180
 catccacaga ccccggtggc catgatcacc gcgtacggca gcctggacac cgcgatccag 240
 gcgctcaagg ccggtgcctt cgacttcctc accaaaccgg tcgacctcgg tcgcttgccg 300
 gagctggtgg caaccgacct acgcttgccg aaccgggaag ccgaggaagc gccggtggac 360
 aaccgctgc tcggcgagtc gccgccgatg cgcgccctgc gcaaccagat cggcaagctg 420
 gcgcgcagcc aggcgccggt ctacatcagt ggcgagtcgc gcagcggcaa ggaactggtg 480
 gcgcgcctga tccacgagca ggggccacgt atcgagcggc cgttcgtgcc ggtgaactgc 540
 ggcgcgattc cctccgagct gatggaaagc gagttcttcg gccacaagaa aggcagcttc 600
 actggcgcta tcgaagacaa gcagggcctg ttccaggccg ccagcgggtg caccctgttc 660
 ctcgacgaag tcgccgacct gccgatggcc atgcagggtca aactgctccg ggcgatccag 720
 gaaaaggccg tgcgcgcggt cggcggccag caggaggtcg ccgtcgcacg tgcgcatect 780
 ctgcgccacc cacaaggacc tcgccgccga agtcggcgcc gggcgcttcg gccaggacct 840
 ctactaccgc ctcaacgtca tcgagctgcg cgtacaccgc tgcgcgaacg ccgcgaggac 900
 atcccgctgc tcgccgaacg catcctcaag cgccctggccg gcgacaccgg cctgccggcc 960
 gccaggctga ccggcgacgc acaggagaag ctgaagaact accgcttccc gggcaacgtc 1020
 cgcgagctgg aaaacatgct ggagcgcgcc tataccctgt gcgaagacga ccagatccag 1080
 cctcacgacc tgcgcctggc cgatgcgccg ggtgccagcc aggaaggcgc cgcgagcctg 1140
 agcgaaatcg acaacctcga ggactacctg gaagacatcg agcgcaagct gatcatgcag 1200
 gactcagagg agaccgctg gaaccgcacc gccgcggccc agcgctggg cctgacgttc 1260
 cgctcgatgc gctaccgcct gaaaaagctg ggcacgcact ga 1302

<210> 349
 <211> 433
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 349
 Thr Gly Tyr Pro Arg Thr Ala Gly Asn His Ser Arg Pro His Glu Ala
 1 5 10 15
 Gly His Pro Gln Arg Pro Gln Arg Gln Gly Ser Arg Glu Leu Leu Ala
 20 25 30
 Arg Glu Pro Phe Asp Leu Cys Leu Thr Asp Met Arg Leu Pro Asp Gly
 35 40 45
 Ser Gly Leu Asp Leu Val Gln Tyr Ile Gln Gln Arg His Pro Gln Thr
 50 55 60
 Pro Val Ala Met Ile Thr Ala Tyr Gly Ser Leu Asp Thr Ala Ile Gln
 65 70 75 80
 Ala Leu Lys Ala Gly Ala Phe Asp Phe Leu Thr Lys Pro Val Asp Leu
 85 90 95
 Gly Arg Leu Arg Glu Leu Val Ala Thr Ala Leu Arg Leu Arg Asn Pro
 100 105 110
 Glu Ala Glu Glu Ala Pro Val Asp Asn Arg Leu Leu Gly Glu Ser Pro
 115 120 125
 Pro Met Arg Ala Leu Arg Asn Gln Ile Gly Lys Leu Ala Arg Ser Gln
 130 135 140
 Ala Pro Val Tyr Ile Ser Gly Glu Ser Gly Ser Gly Lys Glu Leu Val
 145 150 155 160
 Ala Arg Leu Ile His Glu Gln Gly Pro Arg Ile Glu Arg Pro Phe Val
 165 170 175
 Pro Val Asn Cys Gly Ala Ile Pro Ser Glu Leu Met Glu Ser Glu Phe
 180 185 190
 Phe Gly His Lys Lys Gly Ser Phe Thr Gly Ala Ile Glu Asp Lys Gln
 195 200 205
 Gly Leu Phe Gln Ala Ala Ser Gly Gly Thr Leu Phe Leu Asp Glu Val
 210 215 220
 Ala Asp Leu Pro Met Ala Met Gln Val Lys Leu Leu Arg Ala Ile Gln
 225 230 235 240
 Glu Lys Ala Val Arg Ala Val Gly Gly Gln Gln Glu Val Ala Val Ala
 245 250 255
 Arg Ala His Pro Leu Arg His Pro Gln Gly Pro Arg Arg Arg Ser Arg
 260 265 270
 Arg Arg Ala Leu Pro Pro Gly Pro Leu Leu Pro Pro Gln Arg His Arg
 275 280 285
 Ala Ala Arg Thr Pro Leu Arg Glu Arg Arg Glu Asp Ile Pro Leu Leu
 290 295 300
 Ala Glu Arg Ile Leu Lys Arg Leu Ala Gly Asp Thr Gly Leu Pro Ala
 305 310 315 320
 Ala Arg Leu Thr Gly Asp Ala Gln Glu Lys Leu Lys Asn Tyr Arg Phe
 325 330 335
 Pro Gly Asn Val Arg Glu Leu Glu Asn Met Leu Glu Arg Ala Tyr Thr
 340 345 350
 Leu Cys Glu Asp Asp Gln Ile Gln Pro His Asp Leu Arg Leu Ala Asp
 355 360 365
 Ala Pro Gly Ala Ser Gln Glu Gly Ala Ala Ser Leu Ser Glu Ile Asp
 370 375 380
 Asn Leu Glu Asp Tyr Leu Glu Asp Ile Glu Arg Lys Leu Ile Met Gln
 385 390 395 400
 Ala Leu Glu Glu Thr Arg Trp Asn Arg Thr Ala Ala Ala Gln Arg Leu
 405 410 415
 Gly Leu Thr Phe Arg Ser Met Arg Tyr Arg Leu Lys Lys Leu Gly Ile

Asp

<210> 350

<211> 1344

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 350

agctggacac	ccgcagcgcc	cgcaacgtca	aggaagccgc	gagttgctgg	cccgcgagcc	60
gttcgacctg	tgcctcaccg	acatgcgcct	gccggacggc	agcggcctcg	atctggtcca	120
gtacatccag	cagcgccatc	cacagacccc	ggtgggccatg	atcaccgcgt	acggcagcct	180
ggacaccgcg	atccaggcgc	tcaaggccgg	tgccttcgac	ttcctcacca	aaccggtcga	240
cctcggtcgc	ttgcgggagc	tggtggcaac	cgccctacgc	ttgcgcaacc	cggaagccga	300
ggaagcgccg	gtggacaacc	gcctgctcgg	cgagtcgccg	ccgatgcgcg	ccctgcgcaa	360
ccagatcggc	aagctggcgc	gcagccaggc	gccggtctac	atcagtggcg	agtccggcag	420
cggcaaggaa	ctggtggcgc	gcctgatcca	cgagcagggg	ccacgtatcg	agcggccggt	480
cgtgccggtg	aactgcggcg	cgattccctc	cgagctgatg	gaaagcgagt	tcttcggcca	540
caagaaaggc	agcttcactg	gcgctatcga	agacaagcag	ggcctgttcc	aggccgccag	600
cgggtggcacc	ctgttcctcg	acgaagtgcg	cgacctgccg	atggccatgc	aggtcaaact	660
gctccggggc	atccaggaaa	aggccgtgcg	cgcggtcggc	ggccagcagg	aggtcgccgt	720
cgcacgtgcg	catcctctgc	gccaccaca	aggacctcgc	cgccgaagtc	ggcgccgggc	780
gcttcgcgca	ggacctctac	taccgcctca	acgtcatcga	gctgcgcgta	caccgctgcg	840
cgaacgccgc	gaggacatcc	cgctgctcgc	cgaacgcac	ctcaagcgcc	tggccggcga	900
caccggcctg	ccggccgcca	ggctgaccgg	cgacgcacag	gagaagctga	agaactaccg	960
cttcccgggc	aacgtccgcg	agctggaaaa	catgctggag	cgcgcctata	ccctgtgcga	1020
agacgaccag	atccagcctc	acgacctgcg	cctggccgat	gcgcggggtg	ccagccagga	1080
aggcgccgcg	agcctgagcg	aaatcgacaa	cctcgaggac	tacctggaag	acatcgagcg	1140
caagctgata	atgcaggcac	tcgaggagac	ccgctggaac	cgcaccgccg	cggcccagcg	1200
cctgggcctg	acgttccgct	cgatgcgcta	ccgcctgaaa	aagctgggca	tcgactgaaa	1260
gtgaaaaggc	ctgtccgaag	acaggccttt	tggttttcgc	tcctcagagg	cgaccagccg	1320
gggcgtaggg	ggccgggtcg	atga				1344

<210> 351

<211> 447

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 351

Ser	Trp	Thr	Pro	Ala	Pro	Ala	Thr	Ser	Arg	Lys	Pro	Arg	Val	Ala
1			5				10						15	
Gly	Pro	Arg	Ala	Val	Arg	Pro	Val	Pro	His	Arg	His	Ala	Pro	Ala
			20				25					30		Gly
Arg	Gln	Arg	Pro	Arg	Ser	Gly	Pro	Val	His	Pro	Ala	Ala	Pro	Ser
			35				40					45		Thr
Asp	Pro	Gly	Gly	His	Asp	His	Arg	Val	Arg	Gln	Pro	Gly	His	Arg
			50				55				60			Asp
Pro	Gly	Ala	Gln	Gly	Arg	Cys	Leu	Arg	Leu	Pro	His	Gln	Thr	Gly
65						70				75				80
Pro	Arg	Ser	Leu	Ala	Gly	Ala	Gly	Gly	Asn	Arg	Pro	Thr	Leu	Ala
			85						90				95	Gln
Pro	Gly	Ser	Arg	Gly	Ser	Ala	Gly	Gly	Gln	Pro	Pro	Ala	Arg	Arg
			100						105				110	Val
Ala	Ala	Asp	Ala	Arg	Pro	Ala	Gln	Pro	Asp	Arg	Gln	Ala	Gly	Ala
			115				120					125		Gln
Pro	Gly	Ala	Gly	Leu	His	Gln	Trp	Arg	Val	Arg	Gln	Arg	Gln	Gly
			130				135					140		Thr

Gly	Gly	Ala	Pro	Asp	Pro	Arg	Ala	Gly	Ala	Thr	Tyr	Arg	Ala	Ala	Val
145				150						155					160
Arg	Ala	Gly	Glu	Leu	Arg	Arg	Asp	Ser	Leu	Arg	Ala	Asp	Gly	Lys	Arg
			165					170						175	
Val	Leu	Arg	Pro	Gln	Glu	Arg	Gln	Leu	His	Trp	Arg	Tyr	Arg	Arg	Gln
		180						185					190		
Ala	Gly	Pro	Val	Pro	Gly	Arg	Gln	Arg	Trp	His	Pro	Val	Pro	Arg	Arg
		195					200					205			
Ser	Arg	Arg	Pro	Ala	Asp	Gly	His	Ala	Gly	Gln	Thr	Ala	Pro	Gly	Asp
	210				215						220				
Pro	Gly	Lys	Gly	Arg	Ala	Arg	Gly	Arg	Arg	Pro	Ala	Gly	Gly	Arg	Arg
225				230						235					240
Arg	Thr	Cys	Ala	Ser	Ala	Pro	Pro	Thr	Arg	Thr	Ser	Pro	Pro	Lys	
			245					250					255		
Ser	Ala	Pro	Gly	Ala	Ser	Ala	Arg	Thr	Ser	Thr	Thr	Ala	Ser	Thr	Ser
		260					265						270		
Ser	Ser	Cys	Ala	Tyr	Thr	Ala	Ala	Arg	Thr	Pro	Arg	Gly	His	Pro	Ala
		275				280						285			
Ala	Arg	Arg	Thr	His	Pro	Gln	Ala	Pro	Gly	Arg	Arg	His	Arg	Pro	Ala
	290					295					300				
Gly	Arg	Gln	Ala	Asp	Arg	Arg	Thr	Gly	Glu	Ala	Glu	Glu	Leu	Pro	
305				310					315					320	
Leu	Pro	Gly	Gln	Arg	Pro	Arg	Ala	Gly	Lys	His	Ala	Gly	Ala	Arg	Leu
			325					330						335	
Tyr	Pro	Val	Arg	Arg	Arg	Pro	Asp	Pro	Ala	Ser	Arg	Pro	Ala	Pro	Gly
		340					345						350		
Arg	Cys	Ala	Gly	Cys	Gln	Pro	Gly	Arg	Arg	Arg	Glu	Pro	Glu	Arg	Asn
	355					360						365			
Arg	Gln	Pro	Arg	Gly	Leu	Pro	Gly	Arg	His	Arg	Ala	Gln	Ala	Asp	His
	370					375					380				
Ala	Gly	Thr	Arg	Gly	Asp	Pro	Leu	Glu	Pro	His	Arg	Arg	Gly	Pro	Ala
385				390						395					400
Pro	Gly	Pro	Asp	Val	Pro	Leu	Asp	Ala	Leu	Pro	Pro	Glu	Lys	Ala	Gly
			405					410						415	
His	Arg	Leu	Lys	Val	Lys	Arg	Pro	Val	Arg	Arg	Gln	Ala	Phe	Trp	Phe
		420					425						430		
Ser	Leu	Leu	Arg	Gly	Asp	Gln	Pro	Gly	Arg	Arg	Gly	Pro	Gly	Arg	
	435					440						445			

<210> 352
 <211> 369
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 352	
accggcgccct ggctgcgcg cagcttgccg atctggttgc gcagggcgcg catcggcggc	60
gactcgccga gcaggcggtt gtccaccggc gcttcctcgg cttccgggtt gcgcaagcgt	120
agggcggttg ccaccagctc ccgcaagcga ccgaggtcga ccggtttggt gaggaagtcg	180
aaggcacccg ccttgagcgc ctggatcgcg gtgtccaggc tgccgtacgc ggtgatcatg	240
gccaccgggg tctgtggatg gcgctgctgg atgtactgga ccagatcgag gccgctgccc	300
tccggcaggc gcatgtcggg gaggcacagg tcgaacggct cgcgggccag caactcgcg	360
cttccttga	369

<210> 353
 <211> 122
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 353
 Thr Gly Ala Trp Leu Arg Ala Ser Leu Pro Ile Trp Leu Arg Arg Ala
 1 5 10 15
 Arg Ile Gly Gly Asp Ser Pro Ser Arg Leu Ser Thr Gly Ala Ser
 20 25 30
 Ser Ala Ser Gly Leu Arg Lys Arg Arg Ala Val Ala Thr Ser Ser Arg
 35 40 45
 Lys Arg Pro Arg Ser Thr Gly Leu Val Arg Lys Ser Lys Ala Pro Ala
 50 55 60
 Leu Ser Ala Trp Ile Ala Val Ser Arg Leu Pro Tyr Ala Val Ile Met
 65 70 75 80
 Ala Thr Gly Val Cys Gly Trp Arg Cys Trp Met Tyr Trp Thr Arg Ser
 85 90 95
 Arg Pro Leu Pro Ser Gly Arg Arg Met Ser Val Arg His Arg Ser Asn
 100 105 110
 Gly Ser Arg Ala Ser Asn Ser Arg Leu Pro
 115 120

<210> 354
 <211> 522
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 354
 aggtcctggc ggaagcgccc ggcgccgact tcggcggcga ggtccttggtg ggtggcgag 60
 aggatgcgca cgtgcgacgg cgacctctg ctggccgccc accgcgcgca cggccttttc 120
 ctggatcgcc cggagcagtt tgacctgcat ggccatcggc aggtcggcga cttcgtcgag 180
 gaacagggtg ccaccgctgg cggcctggaa caggccctgc ttgtcttcga tagcgccagt 240
 gaagctgcct ttcttggtggc cgaagaactc gctttccatc agctcggagg gaatcgcgcc 300
 gcagttcacc ggcacgaacg gccgctcgat acgtggcccc tgctcgtgga tcaggcgcg 360
 caccagttcc ttgccgctgc cggactcgcc actgatgtag accggcgcct ggctgcgcgc 420
 cagcttgccg atctggttgc gcagggcgcg catcggcggc gactcgccga gcaggcggtt 480
 gtccaccggc gcttcctcgg cttccgggtt gcgcaagcgt ag 522

<210> 355
 <211> 173
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 355
 Arg Ser Trp Arg Lys Arg Pro Ala Pro Thr Ser Ala Ala Arg Ser Leu
 1 5 10 15
 Trp Val Ala Gln Arg Met Arg Thr Cys Asp Gly Asp Leu Leu Leu Ala
 20 25 30
 Ala Asp Arg Ala His Gly Leu Phe Leu Asp Arg Pro Glu Gln Phe Asp
 35 40 45
 Leu His Gly His Arg Gln Val Gly Asp Phe Val Glu Glu Gln Gly Ala
 50 55 60
 Thr Ala Gly Gly Leu Glu Gln Ala Leu Leu Val Phe Asp Ser Ala Ser
 65 70 75 80
 Glu Ala Ala Phe Leu Val Ala Glu Glu Leu Ala Phe His Gln Leu Gly
 85 90 95
 Gly Asn Arg Ala Ala Val His Arg His Glu Arg Pro Leu Asp Thr Trp
 100 105 110
 Pro Leu Leu Val Asp Gln Ala Arg His Gln Phe Leu Ala Ala Ala Gly
 115 120 125
 Leu Ala Thr Asp Val Asp Arg Arg Leu Ala Ala Arg Gln Leu Ala Asp
 130 135 140

Leu Val Ala Gln Gly Ala His Arg Arg Arg Leu Ala Glu Gln Ala Val
 145 150 155 160
 Val His Arg Arg Phe Leu Gly Phe Arg Val Ala Gln Ala
 165 170

<210> 356
 <211> 411
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 356
 ggcggtagta gaggtcctgg cggaagcgcc cggcgccgac ttcggcggcg aggtccttgt 60
 ggggtggcgca gaggatgcgc acgtgcgacg gcgacctcct gctggccgcc gaccgcgcgc 120
 acggcctttt cctggatcgc ccggagcagt ttgacctgca tggccatcgg caggtcggcg 180
 acttcgtcga ggaacagggt gccaccgctg gcggcctgga acaggccctg cttgtcttcg 240
 atagcgccag tgaagctgcc tttcttgtgg ccgaagaact cgctttccat cagctcggag 300
 ggaatcgcg cgcagttcac cggcacgaac ggccgctcga tacgtggccc ctgctcgtgg 360
 atcaggcgcg ccaccagttc cttgccgctg ccggactcgc cactgatgta g 411

<210> 357
 <211> 136
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 357
 Gly Gly Ser Arg Gly Pro Gly Gly Ser Ala Arg Arg Arg Leu Arg Arg
 1 5 10 15
 Arg Gly Pro Cys Gly Trp Arg Arg Gly Cys Ala Arg Ala Thr Ala Thr
 20 25 30
 Ser Cys Trp Pro Pro Thr Ala Arg Thr Ala Phe Ser Trp Ile Ala Arg
 35 40 45
 Ser Ser Leu Thr Cys Met Ala Ile Gly Arg Ser Ala Thr Ser Ser Arg
 50 55 60
 Asn Arg Val Pro Pro Leu Ala Ala Trp Asn Arg Pro Cys Leu Ser Ser
 65 70 75 80
 Ile Ala Pro Val Lys Leu Pro Phe Leu Trp Pro Lys Asn Ser Leu Ser
 85 90 95
 Ile Ser Ser Glu Gly Ile Ala Pro Gln Phe Thr Gly Thr Asn Gly Arg
 100 105 110
 Ser Ile Arg Gly Pro Cys Ser Trp Ile Arg Arg Ala Thr Ser Ser Leu
 115 120 125
 Pro Leu Pro Asp Ser Pro Leu Met
 130 135

<210> 358
 <211> 408
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 358
 tggaaagcga gttcttcggc cacaagaaag gcagcttcac tggcgctatc gaagacaagc 60
 agggcctgtt ccaggccgcc agcgggtggca ccctgttcct cgacgaagtc gccgacctgc 120
 cgatggccat gcaggtcaaa ctgctccggg cgatccagga aaaggccgtg cgcgcggtcg 180
 gcggccagca ggaggtcgcc gtcgcacgtg cgcacctct gcgccacca caaggacctc 240
 gccgccgaag tcggcgccgg gcgcttcgc caggacctct actaccgcct caacgtcatc 300
 gagctgcgcg tacaccgctg cgcgaacgcc gcgaggacat cccgctgctc gccgaacgca 360
 tcctcaagcg cctggccggc gacaccggcc tgccggccgc caggctga 408

<210> 359
 <211> 135
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 359
 Trp Lys Ala Ser Ser Ser Ala Thr Arg Lys Ala Ala Ser Leu Ala Leu
 1 5 10 15
 Ser Lys Thr Ser Arg Ala Cys Ser Arg Pro Pro Ala Val Ala Pro Cys
 20 25 30
 Ser Ser Thr Lys Ser Pro Thr Cys Arg Trp Pro Cys Arg Ser Asn Cys
 35 40 45
 Ser Gly Arg Ser Arg Lys Arg Pro Cys Ala Arg Ser Ala Ala Ser Arg
 50 55 60
 Arg Ser Pro Ser His Val Arg Ile Leu Cys Ala Thr His Lys Asp Leu
 65 70 75 80
 Ala Ala Glu Val Gly Ala Gly Arg Phe Arg Gln Asp Leu Tyr Tyr Arg
 85 90 95
 Leu Asn Val Ile Glu Leu Arg Val His Arg Cys Ala Asn Ala Ala Arg
 100 105 110
 Thr Ser Arg Cys Ser Pro Asn Ala Ser Ser Ser Ala Trp Pro Ala Thr
 115 120 125
 Pro Ala Cys Arg Pro Pro Gly
 130 135

<210> 360
 <211> 504
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 360
 ggagcgaaaa ccaaaaggcc tgtcttcgga caggcctttt cacttttcagt cgatgcccag 60
 cttttttcagg cggtagcgca tcgagcggaa cgtcaggccc aggcgctggg ccgcggcggt 120
 gcggttccag cgggtctcct cgagtgcctg catgatcagc ttgcgctcga tgtcttccag 180
 gtagtctctg aggttgctga tttcgctcag gctcgcggcg ccttcctggc tggcaccggg 240
 cgcctcggcc aggcgcaggt cgtgaggctg gatctggtcg tcttcgcaca gggatataggc 300
 gcgctccagc atgttttcca gctcgcggac gttgcccggg aagcggtagt tcttcagctt 360
 ctctgtgctg tcgccggtca gcctggcggc cggcaggccg gtgtcgccgg ccaggcgctt 420
 gaggatgcgt tcggcgagca gcgggatgtc ctgcgcgcgt tcgcgcagcg gtgtacgcgc 480
 agctcgatga cggtgaggcg gtag 504

<210> 361
 <211> 167
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 361
 Gly Ala Lys Thr Lys Arg Pro Val Phe Gly Gln Ala Phe Ser Leu Ser
 1 5 10 15
 Val Asp Ala Gln Leu Phe Gln Ala Val Ala His Arg Ala Glu Arg Gln
 20 25 30
 Ala Gln Ala Leu Gly Arg Gly Gly Ala Val Pro Ala Gly Leu Leu Glu
 35 40 45
 Cys Leu His Asp Gln Leu Ala Leu Asp Val Phe Gln Val Val Leu Glu
 50 55 60
 Val Val Asp Phe Ala Gln Ala Arg Gly Ala Phe Leu Ala Gly Thr Arg
 65 70 75 80
 Arg Ile Gly Gln Ala Gln Val Val Arg Leu Asp Leu Val Val Phe Ala

Gln	Arg	Ala	Gly	Pro	Gly	Thr	Gly	Val	Val	Pro	Ser	Ala	Gly	Gly	Ser
				165					170					175	
His	Glu	Arg	Ala	Gly	Thr	Asp	His	Arg	Pro	Gly	Pro	Leu	Arg	Pro	Gly
			180					185					190		
Trp	Ser	Pro	Leu	Arg	Ser	Glu	Asn	Gln	Lys	Ala	Cys	Leu	Arg	Thr	Gly
		195					200				205				
Leu	Phe	Thr	Phe	Ser	Arg	Cys	Pro	Ala	Phe	Ser	Gly	Gly	Ser	Ala	Ser
	210					215					220				
Ser	Gly	Thr	Ser	Gly	Pro	Gly	Ala	Gly	Pro	Arg	Arg	Cys	Gly	Ser	Ser
225					230					235					240
Gly	Ser	Pro	Arg	Val	Pro	Ala									
				245											

<210> 364
 <211> 675
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 364
 aaaggcctgt ccgaagacag gccttttgggt tttcgctcct cagaggcgac cagccggggc 60
 gtagggggcc ggggtcgatga tcggttcccg cccgctcatg agatccgccca gcagacggca 120
 cgacgccggt gccaggacca gcccggttgcg gtagtgcccg gtattcagcc agagcccgtc 180
 gaagccaggc accggaccga tataggggat gccttcggga gagcccgggc gcaaccctgc 240
 ccagtggggc accggctgca tgtccgccag ttccggcaac agttctgccg cagacgccct 300
 gaggttttcc agcgcctcgt cggtcggcgt cttgtcgaag cccgaatgtt ccaaggtgct 360
 gccgatcagg atgtggccgt cgcgcgcgag aatcgcgtag cgccccttgg ccagcaccat 420
 gcgcggcagg aaatccgccc cgcacttgta gaggatcatc tgacctttca ccggtaccac 480
 gggcagttcc aggccaagcg gcttcaacaa ctgcgcgctc caggcgcctg ccgccagcag 540
 caccttgtcg ccacggatct cgccacgcga ggtcgccacg ccgaccactc gatcgccgctc 600
 gcgcaaccag ccgcgcacct ccgtctgttc atgcaactcg agattggcga attgttgcag 660
 ggatgccgcg aatga 675

<210> 365
 <211> 224
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 365
 Lys Gly Leu Ser Glu Asp Arg Pro Phe Gly Phe Arg Ser Ser Glu Ala
 1 5 10 15
 Thr Ser Arg Gly Val Gly Gly Arg Val Asp Asp Arg Phe Pro Pro Ala
 20 25 30
 His Glu Ile Arg Gln Gln Thr Ala Arg Arg Arg Cys Gln Asp Gln Pro
 35 40 45
 Val Ala Val Val Pro Gly Ile Gln Pro Glu Pro Val Glu Ala Arg His
 50 55 60
 Arg Thr Asp Ile Gly Asp Ala Phe Gly Arg Ala Arg Ala Gln Pro Cys
 65 70 75 80
 Pro Val Gly His Arg Leu His Val Arg Gln Phe Arg Gln Gln Phe Cys
 85 90 95
 Arg Arg Arg Pro Glu Ala Phe Gln Arg Leu Val Gly Arg Arg Leu Val
 100 105 110
 Glu Ala Arg Met Phe Gln Gly Ala Ala Asp Gln Asp Val Ala Val Ala
 115 120 125
 Pro Arg Asn Arg Val Ala Pro Leu Gly Gln His His Ala Arg Gln Glu
 130 135 140
 Ile Arg Arg Ala Leu Val Glu Asp His Leu Thr Phe His Arg Tyr His
 145 150 155 160

Gly	Gln	Phe	Gln	Ala	Lys	Arg	Leu	Gln	Gln	Leu	Ala	Ala	Pro	Gly	Ala
				165				170						175	
Cys	Arg	Gln	Gln	His	Leu	Val	Ala	Thr	Asp	Leu	Ala	Thr	Arg	Gly	Arg
			180					185					190		
His	Ala	Asp	His	Ser	Ile	Ala	Val	Ala	Gln	Pro	Ala	Ala	His	Leu	Arg
		195					200					205			
Leu	Phe	Met	Gln	Leu	Glu	Ile	Gly	Glu	Leu	Leu	Gln	Gly	Cys	Pro	Gln
	210					215					220				

<210> 366

<211> 1137

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 366

gtgatatttc	tctgttcctg	gcaaatcggt	aggagccctg	tggtgagtag	agatgtagta	60
gtggtaggcg	ctggcgatcat	cggcctgttg	accgcccggg	agctggcgct	cgccggactg	120
cgggtgaccc	tggtggagcg	gggcgagagt	gggcgtgagg	catcctgggc	gggaggcggg	180
atcgtctcgc	cgctctatcc	gtggcgctac	agcccggcgg	tgaccgccct	ggcgactggg	240
tcgcaggact	tctaccgggc	cctggggcag	cgtttgctcg	acgagaccgg	gctcgatccc	300
gaggtccata	ccgttggcct	gtactggctg	gacctggacg	accagaccga	ggcactgcag	360
tgggcacgca	accacacccg	gccgttgaag	gaagtgccga	tcgaggaggc	ctacgcggcg	420
gtgcccgggc	tgggcgcagg	cttccagcgg	gcggtctaca	tgtcgggcgt	ggccaatgtg	480
cgcaatcctc	gcctggcgcg	ctcattgcgg	gcatccctgc	aacaattcgc	caatctcgag	540
ttgcatgaac	agacggaggt	gcgcggctgg	ttgcgcgacg	gcgatcgagt	ggtcggcggtg	600
gcgacctcgc	gtggcgagat	ccgtggcgac	aaggtgctgc	tggcggcagg	cgctgggagc	660
ggcgagttgt	tgaagccgct	tggcctggaa	ctgcccgtgg	taccggtgaa	aggtcagatg	720
atcctctaca	agtgcgcggc	ggatttcctg	ccgcgcgatg	tgctggccaa	ggggcgctac	780
gcgattccgc	ggcgcgacgg	ccacatcctg	atcggcagca	ccttggaaca	ttcgggcttc	840
gacaagacgc	cgaccgacga	ggcgtgggaa	agcctcaggg	cgtctgcggc	agaactggtg	900
ccggaactgg	cggacatgca	gccggtggcc	cactgggcag	ggttgcgccc	gggctctccc	960
gaaggcatcc	cctatatcgg	tccggtgcct	ggcttcgacg	ggctctggct	gaataccggg	1020
cactaccgca	acgggctggt	cctggcaccg	gcgtcgtgcc	gtctgctggc	ggatctcatg	1080
agcgggcggg	aaccgatcat	cgacccggcc	ccctacgccc	cggctggtcg	cctctga	1137

<210> 367

<211> 378

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 367

Val	Ile	Phe	Leu	Cys	Ser	Trp	Gln	Ile	Gly	Arg	Ser	Pro	Val	Val	Ser
1				5					10					15	
Arg	Asp	Val	Val	Val	Val	Gly	Ala	Gly	Val	Ile	Gly	Leu	Leu	Thr	Ala
			20					25					30		
Arg	Glu	Leu	Ala	Leu	Ala	Gly	Leu	Arg	Val	Thr	Leu	Val	Glu	Arg	Gly
		35					40					45			
Glu	Ser	Gly	Arg	Glu	Ala	Ser	Trp	Ala	Gly	Gly	Gly	Ile	Val	Ser	Pro
	50					55					60				
Leu	Tyr	Pro	Trp	Arg	Tyr	Ser	Pro	Ala	Val	Thr	Ala	Leu	Ala	His	Trp
65					70					75				80	
Ser	Gln	Asp	Phe	Tyr	Pro	Ala	Leu	Gly	Gln	Arg	Leu	Leu	Asp	Glu	Thr
			85					90					95		
Gly	Leu	Asp	Pro	Glu	Val	His	Thr	Val	Gly	Leu	Tyr	Trp	Leu	Asp	Leu
		100					105						110		
Asp	Asp	Gln	Thr	Glu	Ala	Leu	Gln	Trp	Ala	Arg	Asn	His	Thr	Arg	Pro
	115						120					125			
Leu	Lys	Glu	Val	Pro	Ile	Glu	Glu	Ala	Tyr	Ala	Ala	Val	Pro	Gly	Leu

130	135	140
Gly Ala Gly Phe Gln Arg Ala Val Tyr Met Ser Gly Val Ala Asn Val		
145	150	155
Arg Asn Pro Arg Leu Ala Arg Ser Leu Arg Ala Ser Leu Gln Gln Phe		
	165	170
Ala Asn Leu Glu Leu His Glu Gln Thr Glu Val Arg Gly Trp Leu Arg		
	180	185
Asp Gly Asp Arg Val Val Gly Val Ala Thr Ser Arg Gly Glu Ile Arg		
	195	200
Gly Asp Lys Val Leu Leu Ala Ala Gly Ala Trp Ser Gly Glu Leu Leu		
	210	215
Lys Pro Leu Gly Leu Glu Leu Pro Val Val Pro Val Lys Gly Gln Met		
225	230	235
Ile Leu Tyr Lys Cys Ala Ala Asp Phe Leu Pro Arg Met Val Leu Ala		
	245	250
Lys Gly Arg Tyr Ala Ile Pro Arg Arg Asp Gly His Ile Leu Ile Gly		
	260	265
Ser Thr Leu Glu His Ser Gly Phe Asp Lys Thr Pro Thr Asp Glu Ala		
	275	280
Leu Glu Ser Leu Arg Ala Ser Ala Ala Glu Leu Leu Pro Glu Leu Ala		
	290	295
Asp Met Gln Pro Val Ala His Trp Ala Gly Leu Arg Pro Gly Ser Pro		
305	310	315
Glu Gly Ile Pro Tyr Ile Gly Pro Val Pro Gly Phe Asp Gly Leu Trp		
	325	330
Leu Asn Thr Gly His Tyr Arg Asn Gly Leu Val Leu Ala Pro Ala Ser		
	340	345
Cys Arg Leu Leu Ala Asp Leu Met Ser Gly Arg Glu Pro Ile Ile Asp		
	355	360
Pro Ala Pro Tyr Ala Pro Ala Gly Arg Leu		
	370	375

<210> 368
 <211> 798
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 368	
ggctttccag cgcctcgtcg gtcggcgtct tgtcgaagcc cgaatgttcc aaggtgctgc	60
cgatcaggat gtggccgtcg cgccgcggaa tcgcgtagcg ccccttggcc agcaccatgc	120
gcggcaggaa atccgccgcg cacttgtaga ggatcatctg acctttcacc ggtaccacgg	180
gcagttccag gccaagcggc ttcaacaact cgccgctcca ggcgcctgcc gccagcagca	240
ccttgctgcc acgcatctcg ccacgcgagg tcgccacgcc gaccactcga tcgccgtcgc	300
gcaaccagcc gcgcacctcc gtctgttcat gcaactcgag attggcgaat tgttcgaggg	360
atgcccgcaa tgagcgcgcc aggcgaggat tgcgcacatt ggccacgccc gacatgtaga	420
ccgcccgtcg gaagcctgcg cccagcccgg gcaccgcccgc gtaggcctcc tcgatcggca	480
cttccttcaa cggccgggtg tggttgcgtg cccactgcag tgcctcggtc tggtcgtcca	540
ggtccagcca gtacaggcca acggtatgga cctcgggatc gagcccggtc tcgtcgagca	600
aacgctgccc cagggccggg tagaagtcct gcgaccagtg cgccagggcg gtcaccgccc	660
ggctgtagcg ccacggatag agcggcgaga cgatccccgc tcccggccag gatgcctcac	720
gccactctc gcccgcctcc accagggcca cccgcagtcc ggcgagcgcc agctccccggg	780
cggtaacag gccgatga	798

<210> 369
 <211> 265
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 369
 Gly Phe Pro Ala Pro Arg Arg Ser Ala Ser Cys Arg Ser Pro Asn Val
 1 5 10 15
 Pro Arg Cys Cys Arg Ser Gly Cys Gly Arg Arg Ala Ala Glu Ser Arg
 20 25 30
 Ser Ala Pro Trp Pro Ala Pro Cys Ala Ala Gly Asn Pro Pro Arg Thr
 35 40 45
 Cys Arg Gly Ser Ser Asp Leu Ser Pro Val Pro Arg Ala Val Pro Gly
 50 55 60
 Gln Ala Ala Ser Thr Thr Arg Arg Ser Arg Arg Leu Pro Pro Ala Ala
 65 70 75 80
 Pro Cys Arg His Gly Ser Arg His Ala Arg Ser Pro Arg Arg Pro Leu
 85 90 95
 Asp Arg Arg Arg Ala Thr Ser Arg Ala Pro Pro Ser Val His Ala Thr
 100 105 110
 Arg Asp Trp Arg Ile Val Ala Gly Met Pro Ala Met Ser Ala Pro Gly
 115 120 125
 Glu Asp Cys Ala His Trp Pro Arg Pro Thr Cys Arg Pro Pro Ala Gly
 130 135 140
 Ser Leu Arg Pro Ala Arg Ala Pro Pro Arg Arg Pro Pro Arg Ser Ala
 145 150 155 160
 Leu Pro Ser Thr Ala Gly Cys Gly Cys Val Pro Thr Ala Val Pro Arg
 165 170 175
 Ser Gly Arg Pro Gly Pro Ala Ser Thr Gly Gln Arg Tyr Gly Pro Arg
 180 185 190
 Asp Arg Ala Arg Ser Arg Arg Ala Asn Ala Ala Pro Gly Pro Gly Arg
 195 200 205
 Ser Pro Ala Thr Ser Ala Pro Gly Arg Ser Pro Pro Gly Cys Ser Ala
 210 215 220
 Thr Asp Arg Ala Ala Arg Arg Ser Arg Leu Pro Pro Arg Met Pro His
 225 230 235 240
 Ala His Ser Arg Pro Ala Pro Pro Gly Ser Pro Ala Val Arg Arg Ala
 245 250 255
 Pro Ala Pro Gly Arg Ser Thr Gly Arg
 260 265

<210> 370
 <211> 390
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 370
 ggcacacctgg gcgggaggcg ggatcgctctc gccgctctat ccgtggcgct acagcccggc 60
 ggtgaccgcc ctggcgcaact ggtcgcagga cttctaccgg gccctggggc agcgtttgct 120
 cgacgagacc gggctcgatc ccgaggtcca taccgttggc ctgtactggc tggacctgga 180
 cgaccagacc gaggcactgc agtgggcacg caaccacacc cggccgttga aggaagtgcc 240
 gatcgaggag gcctacgcgg cggtgcccgg gctgggcgca ggcttccagc gggcgggtcta 300
 catgtcgggc gtggccaatg tgcgcaatcc tcgcctggcg cgctcattgc gggcatccct 360
 gcaacaattc gccaatctcg agttgcatga 390

<210> 371
 <211> 129
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 371
 Gly Ile Leu Gly Gly Arg Arg Asp Arg Leu Ala Ala Leu Ser Val Ala
 1 5 10 15

Leu Gln Pro Gly Gly Asp Arg Pro Gly Ala Leu Val Ala Gly Leu Leu
 20 25 30
 Pro Gly Pro Gly Ala Ala Phe Ala Arg Arg Asp Arg Ala Arg Ser Arg
 35 40 45
 Gly Pro Tyr Arg Trp Pro Val Leu Ala Gly Pro Gly Arg Pro Asp Arg
 50 55 60
 Gly Thr Ala Val Gly Thr Gln Pro His Pro Ala Val Glu Gly Ser Ala
 65 70 75 80
 Asp Arg Gly Gly Leu Arg Gly Gly Ala Arg Ala Gly Arg Arg Leu Pro
 85 90 95
 Ala Gly Gly Leu His Val Gly Arg Gly Gln Cys Ala Gln Ser Ser Pro
 100 105 110
 Gly Ala Leu Ile Ala Gly Ile Pro Ala Thr Ile Arg Gln Ser Arg Val
 115 120 125
 Ala

<210> 372
 <211> 603
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 372
 gcgcgccagg cgaggattgc gcacattggc caccgcccagc atgtagaccg cccgctggaa 60
 gcctgcgccc agcccgggca ccgcccgcgt ggcctcctcg atcggcactt ccttcaacgg 120
 ccgggtgtgg ttgcgtgccc actgcagtgc ctcggtctcg tcgtccaggc ccagccagta 180
 caggccaacg gtatggacct cgggatcgag cccggtctcg tcgagcaaac gctgccccag 240
 ggccgggtag aagtcctgcy accagtgcgc cagggcggtc accgcccggc tgtagcgcca 300
 cgatatagc ggcgagacga tcccgcctcc cgcccaggat gcctcacgcc cactctcgcc 360
 ccgctccacc agggtcaccc gcagtccggc gagcgccagc tcccgggcgg tcaacaggcc 420
 gatgacgcca gcgcctacca ctactacatc tctactcacc acagggctcc taccgatttg 480
 ccaggaacag agaaatatca ctcaaaggga tcagatgctg acgaattgcc tgcttcaacg 540
 aactcagtcg aatctagtcc cggtgaaaag cccatcatatc ccgcagaggt attcatccca 600
 tga 603

<210> 373
 <211> 200
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 373
 Ala Arg Gln Ala Arg Ile Ala His Ile Gly His Ala Arg His Val Asp
 1 5 10 15
 Arg Pro Leu Glu Ala Cys Ala Gln Pro Gly His Arg Arg Val Gly Leu
 20 25 30
 Leu Asp Arg His Phe Leu Gln Arg Pro Gly Val Val Ala Cys Pro Leu
 35 40 45
 Gln Cys Leu Gly Leu Val Val Gln Val Gln Pro Val Gln Ala Asn Gly
 50 55 60
 Met Asp Leu Gly Ile Glu Pro Gly Leu Val Glu Gln Thr Leu Pro Gln
 65 70 75 80
 Gly Arg Val Glu Val Leu Arg Pro Val Arg Gln Gly Gly His Arg Arg
 85 90 95
 Ala Val Ala Pro Arg Ile Glu Arg Arg Asp Asp Pro Ala Ser Arg Pro
 100 105 110
 Gly Cys Leu Thr Pro Thr Leu Ala Pro Leu His Gln Gly His Pro Gln
 115 120 125
 Ser Gly Glu Arg Gln Leu Pro Gly Gly Gln Gln Ala Asp Asp Ala Ser

130	135	140															
Ala	Tyr	His	Tyr	Tyr	Ile	Ser	Thr	His	His	Arg	Ala	Pro	Thr	Asp	Leu		
145					150					155					160		
Pro	Gly	Thr	Glu	Lys	Tyr	His	Ser	Lys	Gly	Ser	Asp	Ala	Asp	Glu	Leu		
				165					170						175		
Pro	Ala	Ser	Thr	Asn	Ser	Val	Glu	Ser	Ser	Pro	Gly	Glu	Lys	Pro	Ile		
			180					185						190			
Ile	Pro	Ala	Glu	Val	Phe	Ile	Pro										
	195						200										

<210> 374
 <211> 405
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 374																	
agcggcgaga	cgatccccgcc	tcccgccag	gatgcctcac	gcccactctc	gccccgctcc												60
accaggggtca	cccgagctcc	ggcgagcgcc	agctccccggg	cggtcaacag	gccgatgacg												120
ccagcgccta	ccactactac	atctctactc	accacagggc	tcctaccgat	ttgccaggaa												180
cagagaaata	tcactcaaag	ggatcagatg	ctgacgaatt	gcctgcttca	acgaactcag												240
tcgaatctag	tcccgggtgaa	aagcccatca	taccgcgaga	ggtattcatc	ccatgaaatc												300
gagtgggttg	aatttggtgg	aactatcgat	agtcctatcg	atccttgcca	taggcgtgac												360
aattgcgctg	cccaccctcc	ccgacagaat	gaagcgggac	attag													405

<210> 375
 <211> 134
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 375																	
Ser	Gly	Glu	Thr	Ile	Pro	Pro	Pro	Ala	Gln	Asp	Ala	Ser	Arg	Pro	Leu		
1				5				10						15			
Ser	Pro	Arg	Ser	Thr	Arg	Val	Thr	Arg	Ser	Pro	Ala	Ser	Ala	Ser	Ser		
			20					25					30				
Arg	Ala	Val	Asn	Arg	Pro	Met	Thr	Pro	Ala	Pro	Thr	Thr	Thr	Thr	Ser		
		35					40					45					
Leu	Leu	Thr	Thr	Gly	Leu	Leu	Pro	Ile	Cys	Gln	Glu	Gln	Arg	Asn	Ile		
	50				55					60							
Thr	Gln	Arg	Asp	Gln	Met	Leu	Thr	Asn	Cys	Leu	Leu	Gln	Arg	Thr	Gln		
65				70				75							80		
Ser	Asn	Leu	Val	Pro	Val	Lys	Ser	Pro	Ser	Tyr	Pro	Gln	Arg	Tyr	Ser		
			85					90						95			
Ser	His	Glu	Ile	Glu	Trp	Phe	Glu	Phe	Gly	Gly	Thr	Ile	Asp	Ser	Pro		
		100					105					110					
Ile	Asp	Pro	Cys	Asp	Arg	Arg	Asp	Asn	Cys	Ala	Ala	His	Pro	Pro	Arg		
	115						120					125					
Gln	Asn	Glu	Ala	Gly	His												
	130																

<210> 376
 <211> 534
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 376																	
aaagcccatc	atacccgag	aggtattcat	cccatgaaat	cgagtgggtt	gaatttggtg												60
gaactatcga	tagtcctatc	gaccttgcg	ataggcggtga	caattgcgct	gccaccctc												120

cccgacagaa	tgaagcggga	cattagccgt	gatattgggtg	acagcctgac	tagtcatgtg	180
atggctgctg	gggctagcag	catacagaac	ggcgtgatca	tcgaggtgtg	cggtagcggg	240
gacggcagta	cctgcagcga	ggaatggcat	ctcggctggg	tcagccgtaa	cgacaggagc	300
caacagatac	tggcccggca	tgaaaatacg	agtcgcaccg	atattcattg	gcggggcttc	360
gacaagcgac	tgcgctacct	gcctaattgg	accagcccta	caggtaacgg	gcgtttcttc	420
gaatgtaagg	acgatcgcat	cgagtggcaa	ttggtgctca	atcggcaagg	ccgcctcagg	480
gtggcgggaa	agagcgaaaa	taaaaagctc	tcttacctgt	gctccaggcg	gtga	534

<210> 377

<211> 177

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 377

Lys	Ala	His	His	Thr	Arg	Arg	Gly	Ile	His	Pro	Met	Lys	Ser	Ser	Gly
1				5				10						15	
Leu	Asn	Leu	Val	Glu	Leu	Ser	Ile	Val	Leu	Ser	Ile	Leu	Ala	Ile	Gly
			20					25					30		
Val	Thr	Ile	Ala	Leu	Pro	Thr	Leu	Pro	Asp	Arg	Met	Lys	Arg	Asp	Ile
		35					40					45			
Ser	Arg	Asp	Ile	Gly	Asp	Ser	Leu	Thr	Ser	His	Val	Met	Ala	Ala	Arg
	50					55					60				
Ala	Ser	Ser	Ile	Gln	Asn	Gly	Val	Ile	Ile	Glu	Val	Cys	Gly	Ser	Gly
65					70					75					80
Asp	Gly	Ser	Thr	Cys	Ser	Glu	Glu	Trp	His	Leu	Gly	Trp	Phe	Ser	Arg
				85					90					95	
Asn	Asp	Arg	Ser	Gln	Gln	Ile	Leu	Ala	Arg	His	Glu	Asn	Thr	Ser	Arg
			100					105						110	
Thr	Asp	Ile	His	Trp	Arg	Gly	Phe	Asp	Lys	Arg	Leu	Arg	Tyr	Leu	Pro
		115					120					125			
Asn	Gly	Thr	Ser	Pro	Thr	Gly	Asn	Gly	Arg	Phe	Phe	Glu	Cys	Lys	Asp
	130					135				140					
Asp	Arg	Ile	Glu	Trp	Gln	Leu	Val	Leu	Asn	Arg	Gln	Gly	Arg	Leu	Arg
145					150					155					160
Val	Ala	Gly	Lys	Ser	Glu	Asn	Lys	Lys	Leu	Ser	Tyr	Leu	Cys	Ser	Arg
				165					170					175	

Arg

<210> 378

<211> 540

<212> DNA

<213> *Pseudomonas aeruginosa*

<400> 378

tggagagcgc	attgtccctg	tagcagagac	agccggagcg	gagagtggga	tgactggcaa	60
acggtatgtg	aaacagttct	ctcaccgcct	ggagcacagg	taagagagct	ttttattttc	120
gctctttccc	gccaccctga	ggcggccttg	ccgattgagc	accaattgcc	actcgatgcg	180
atcgtcctta	cattcgaaga	aacgcccgtt	acctgtaggg	ctggtgccat	taggcaggta	240
gcgcagtcgc	ttgtcgaagc	cccgccaatg	aatatcgggtg	cgactcgtat	tttcatgccg	300
ggccagtatc	tgttggtcc	tgtcgttacg	gctgaaccag	ccgagatgcc	attcctcgct	360
gcaggtactg	ccgtcacccg	taccgcacac	ctcgatgata	acgccgttct	gtatgctgct	420
agcccgcgca	gccatcacat	gactagtcag	gctgtcacca	atatcacggc	taatgtcccc	480
cttcattctg	tcggggaggg	tgggcagcgc	aattgtcacg	cctatcgcaa	ggatcgatag	540

<210> 379

<211> 179

<212> PRT
 <213> Pseudomonas aeruginosa

<400> 379
 Trp Arg Ala His Cys Pro Cys Ser Arg Asp Ser Arg Ser Gly Glu Trp
 1 5 10 15
 Asp Asp Trp Gln Thr Val Cys Glu Thr Val Leu Ser Pro Pro Gly Ala
 20 25 30
 Gln Val Arg Glu Leu Phe Ile Phe Ala Leu Ser Arg His Pro Glu Ala
 35 40 45
 Ala Leu Pro Ile Glu His Gln Leu Pro Leu Asp Ala Ile Val Leu Thr
 50 55 60
 Phe Glu Glu Thr Pro Val Thr Cys Arg Ala Gly Ala Ile Arg Gln Val
 65 70 75 80
 Ala Gln Ser Leu Val Glu Ala Pro Pro Met Asn Ile Gly Ala Thr Arg
 85 90 95
 Ile Phe Met Pro Gly Gln Tyr Leu Leu Ala Pro Val Val Thr Ala Glu
 100 105 110
 Pro Ala Glu Met Pro Phe Leu Ala Ala Gly Thr Ala Val Thr Ala Thr
 115 120 125
 Ala His Leu Asp Asp His Ala Val Leu Tyr Ala Ala Ser Pro Arg Ser
 130 135 140
 His His Met Thr Ser Gln Ala Val Thr Asn Ile Thr Ala Asn Val Pro
 145 150 155 160
 Leu His Ser Val Gly Glu Gly Gly Gln Arg Asn Cys His Ala Tyr Arg
 165 170 175
 Lys Asp Arg

<210> 380
 <211> 402
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 380
 tcatcgaggt gtgcggtagc ggtgacggca gtacctgcag cgaggaatgg catctcggct 60
 gggtcagccg taacgacagg agccaacaga tactggcccg gcatgaaaat acgagtcgca 120
 cccgatattca ttggcggggc ttcgacaagc gactgcgcta cctgcctaata ggcaccagcc 180
 ctacaggttaa cgggcgtttc ttcgaatgta aggacgatcg catcgagtgg caattggtgc 240
 tcaatcggca aggccgcctc aggggtggcgg gaaagagcga aaataaaaag ctctcttacc 300
 tgtgctccag gcggtgagag aactgtttca cataccgttt gccagtcatc ccactctccg 360
 ctccggctgt ctctgctaca gggacaatgc gctctccact ag 402

<210> 381
 <211> 133
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 381
 Ser Ser Arg Cys Ala Val Ala Val Thr Ala Val Pro Ala Ala Arg Asn
 1 5 10 15
 Gly Ile Ser Ala Gly Ser Ala Val Thr Thr Gly Ala Asn Arg Tyr Trp
 20 25 30
 Pro Gly Met Lys Ile Arg Val Ala Pro Ile Phe Ile Gly Gly Ala Ser
 35 40 45
 Thr Ser Asp Cys Ala Thr Cys Leu Met Ala Pro Ala Leu Gln Val Thr
 50 55 60
 Gly Val Ser Ser Asn Val Arg Thr Ile Ala Ser Ser Gly Asn Trp Cys

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<210> 382
<211> 642
<212> DNA
<213> Pseudomonas aeruginosa
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<210> 383
<211> 213
<212> PRT
<213> Pseudomonas aeruginosa
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-199-

Thr Val Gln Pro Ser Gly Arg Val Ile Leu Tyr Pro Ser Ser Lys Gln
 195 200 205
 Pro Asp Ser Cys Asn
 210

<210> 384
 <211> 444
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 384
 cgagacctgc tggaaacctt ggtgcttttg cacggtggtc gcgccgctga tgatttccag 60
 gcctttttgcc cagtcattgt tctgcgtcgc cctgatgctc acattggcat gacgggtttac 120
 agcttcgctg cgagcgtact gaagcaggct gtagagttcc tcgctggcag tctggattcg 180
 gttgcgctcg atcaaggcgt tgaaactggg tacggcaatg ctggcgaata tggcgaccag 240
 aaccaacacc atcatcaact cgatcaggga aaagccggcg ctgcgacaaa tagagcgcat 300
 gcagtactcc acaaggaaaa gggccagata atcttgcccta gtggagagcg cattgtccct 360
 gtagcagaga cagccggagc ggagagtggg atgactggca aacggtatgt gaaacagttc 420
 tctcaccgcc tggagcacag gtaa 444

<210> 385
 <211> 147
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 385
 Arg Asp Leu Leu Glu Thr Leu Val Leu Leu His Gly Gly Arg Ala Ala
 1 5 10 15
 Asp Asp Phe Gln Ala Phe Cys Pro Val Ile Val Leu Arg Arg Pro Asp
 20 25 30
 Ala His Ile Gly Met Thr Val Tyr Ser Phe Ala Ala Ser Val Leu Lys
 35 40 45
 Gln Ala Val Glu Phe Leu Ala Gly Ser Leu Asp Ser Val Ala Leu Asp
 50 55 60
 Gln Gly Val Glu Thr Gly Tyr Gly Asn Ala Gly Glu Tyr Gly Asp Gln
 65 70 75 80
 Asn Gln His His His Gln Leu Asp Gln Gly Lys Ala Gly Ala Ala Thr
 85 90 95
 Asn Arg Ala His Ala Val Leu His Lys Glu Lys Gly Gln Ile Ile Leu
 100 105 110
 Pro Ser Gly Glu Arg Ile Val Pro Val Ala Glu Thr Ala Gly Ala Glu
 115 120 125
 Ser Gly Met Thr Gly Lys Arg Tyr Val Lys Gln Phe Ser His Arg Leu
 130 135 140
 Glu His Arg
 145

<210> 386
 <211> 534
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 386
 ggaaagccca tgtctcgaga aacgggtttc agcatgatcg aagtactggt tgctctgggtg 60
 ctgatcagca ttggcgtact gggcatgggt gccatgcaag ggcgacgat ccagtacacg 120
 caggagtcgg tacaacgcaa tgccgcagca atgcttgcta gcgacctgat ggaaataatg 180
 cgtgcggacc cagatgccgt actcaatcta cgcgcccaac tacgcgaaga ctcggtctac 240

tacaaggcca	agggcagcga	ctttcccgca	gccccagcgc	gctgcgcgcc	attgccagca	300
gatgctaagg	aacgtctcgg	ctgctggggc	caacaggcct	cgaaagactt	gccgggagcc	360
tccgcactct	tgaatagcca	attctacatt	tgtcgcagcc	caaccccggg	tacctgcgac	420
aacaccaaag	gctcggccat	cgaaatccag	gttgctggc	gagccatgga	tggagcgtgt	480
ttcaacgcct	ctgactccac	cttgtgcacc	tacagcgtcc	gctccgaatt	gtga	534

<210> 387
 <211> 177
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 387
 Gly Lys Pro Met Ser Arg Glu Thr Gly Phe Ser Met Ile Glu Val Leu
 1 5 10 15
 Val Ala Leu Val Leu Ile Ser Ile Gly Val Leu Gly Met Val Ala Met
 20 25 30
 Gln Gly Arg Thr Ile Gln Tyr Thr Gln Glu Ser Val Gln Arg Asn Ala
 35 40 45
 Ala Ala Met Leu Ala Ser Asp Leu Met Glu Ile Met Arg Ala Asp Pro
 50 55 60
 Asp Ala Val Leu Asn Leu Arg Ala Gln Leu Arg Glu Asp Ser Val Tyr
 65 70 75 80
 Tyr Lys Ala Lys Gly Ser Asp Phe Pro Ala Ala Pro Ala Arg Cys Ala
 85 90 95
 Pro Leu Pro Ala Asp Ala Lys Glu Arg Leu Gly Cys Trp Ala Gln Gln
 100 105 110
 Ala Ser Lys Asp Leu Pro Gly Ala Ser Ala Leu Leu Asn Ser Gln Phe
 115 120 125
 Tyr Ile Cys Arg Ser Pro Thr Pro Gly Thr Cys Asp Asn Thr Lys Gly
 130 135 140
 Ser Ala Ile Glu Ile Gln Val Ala Trp Arg Ala Met Asp Gly Ala Cys
 145 150 155 160
 Phe Asn Ala Ser Asp Ser Thr Leu Cys Thr Tyr Ser Val Arg Ser Glu
 165 170 175
 Leu

<210> 388
 <211> 330
 <212> DNA
 <213> *Pseudomonas aeruginosa*

agagcatgct	tgttctcaca	attcggagcg	gacgctgtag	gtgcacaagg	tggagtcaga	60
ggcgttgaaa	cacgctccat	ccatggctcg	ccaggcaacc	tggatttcga	tggccgagcc	120
tttgggtgtg	tcgcaggtac	ccgggggttg	gctgcgacaa	atgtagaatt	ggctattcaa	180
gagtgcggag	gctcccggca	agtctttcga	ggcctgttgg	gcccagcagc	cgagacgttc	240
cttagcatct	gctggcaatg	gcgcgcagcg	cgctggggct	gcgggaaagt	cgctgccctt	300
ggccttgtag	tagaccgagt	cttcgcgtag				330

<210> 389
 <211> 109
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 389
 Arg Ala Cys Leu Phe Ser Gln Phe Gly Ala Asp Ala Val Gly Ala Gln
 1 5 10 15

Gly	Gly	Val	Arg	Gly	Val	Glu	Thr	Arg	Ser	Ile	His	Gly	Ser	Pro	Gly
		20						25				30			
Asn	Leu	Asp	Phe	Asp	Gly	Arg	Ala	Phe	Gly	Val	Val	Ala	Gly	Thr	Arg
		35					40					45			
Gly	Trp	Ala	Ala	Thr	Asn	Val	Glu	Leu	Ala	Ile	Gln	Glu	Cys	Gly	Gly
	50				55						60				
Ser	Arg	Gln	Val	Phe	Arg	Gly	Leu	Leu	Gly	Pro	Ala	Ala	Glu	Thr	Phe
65					70					75					80
Leu	Ser	Ile	Cys	Trp	Gln	Trp	Arg	Ala	Ala	Arg	Trp	Gly	Cys	Gly	Lys
			85					90					95		
Val	Ala	Ala	Leu	Gly	Leu	Val	Val	Asp	Arg	Val	Phe	Ala			
			100					105							

<210> 390
 <211> 327
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 390	
atagccaatt ctacatttgt cgcagcccaa ccccggttac ctgcgacaac accaaaggct	60
cggccatcga aatccagggtt gcctggcgag ccatggatgg agcgtgtttc aacgcctctg	120
actccacctt gtgcacctac agcgtccgct ccgaattgtg agaacaagca tgctcttcag	180
caaaatgcag aaaggcctat cgatggtaga actgctcgtg gcaactcgcta taagcagctt	240
cctgatacctg gggatcagcc agatctacat cgacaacaaa cgcaactatc ttttccagca	300
aggccaggcc ggcaaccagg aaaatag	327

<210> 391
 <211> 108
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 391	
Ile Ala Asn Ser Thr Phe Val Ala Ala Gln Pro Arg Val Pro Ala Thr	
1 5 10 15	
Thr Pro Lys Ala Arg Pro Ser Lys Ser Arg Leu Pro Gly Glu Pro Trp	
20 25 30	
Met Glu Arg Val Ser Thr Pro Leu Thr Pro Pro Cys Ala Pro Thr Ala	
35 40 45	
Ser Ala Pro Asn Cys Glu Asn Lys His Ala Leu Gln Gln Asn Ala Glu	
50 55 60	
Arg Pro Ile Asp Gly Arg Thr Ala Arg Gly Thr Arg Tyr Lys Gln Leu	
65 70 75 80	
Pro Asp Pro Gly Asp Gln Pro Asp Leu His Arg Gln Gln Thr Gln Leu	
85 90 95	
Ser Phe Pro Ala Arg Pro Gly Arg Gln Pro Gly Lys	
100 105	

<210> 392
 <211> 864
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 392	
ctccaccttg tgcacctaca gcgtccgctc cgaattgtga gaacaagcat gctcttcagc	60
aaaatgcaga aaggcctatc gatggtagaa ctgctcgtgg cactcgctat aagcagcttc	120
ctgatcctgg ggatcagcca gatctacatc gacaacaaac gcaactatct tttccagcaa	180
ggccaggccg gcaaccagga aaatagccgc ttcgtttctta tgctgctgca gcaacaactg	240

gataagacag	cctatcgtcg	ccttcacgac	gacaacatgg	agaatgcttt	caaatccgcg	300
acattcaatg	gctgtcgtgc	atttgtggct	ggcgagacta	tcgctgcggc	aactgccctc	360
aaggcgggtg	agtacggtgt	ctgcttgccg	tatcaacccg	cctacaaagg	ggagcatgat	420
tgcttcggta	atgaaattac	cggagttccg	gaaaagccct	tcacaaatac	tccccctgtc	480
gtcgttcgcc	tggctctacct	accgagcgcc	ggtaccctga	gttgcagtcg	tcccgatata	540
gcccgatcga	aatcggggaga	attggtcagt	ggtctcacag	acttccgctt	ggaagcgggg	600
gtcggggccag	cagatcgtag	cgaacgcaaa	gtatccagct	tcgtcgcact	acaggatgtc	660
gccggtcgtc	ctatccgagc	attgcgcttc	tcaatcctgg	caggcagcga	caatacaagc	720
ctgcgcacag	gagatgatag	ccaggcacgc	gatcgctgga	tcgtccttta	tcccagagagc	780
aaaagcgcca	tcgaggccgc	agacaaaggc	cagatttacc	aaatagcgcg	tggttaaccaa	840
accatcagga	atctcatgcc	atga				864

<210> 393

<211> 287

<212> PRT

<213> *Pseudomonas aeruginosa*

<400> 393

Leu	His	Leu	Val	His	Leu	Gln	Arg	Pro	Leu	Arg	Ile	Val	Arg	Thr	Ser
1				5					10					15	
Met	Leu	Phe	Ser	Lys	Met	Gln	Lys	Gly	Leu	Ser	Met	Val	Glu	Leu	Leu
			20					25					30		
Val	Ala	Leu	Ala	Ile	Ser	Ser	Phe	Leu	Ile	Leu	Gly	Ile	Ser	Gln	Ile
			35				40					45			
Tyr	Ile	Asp	Asn	Lys	Arg	Asn	Tyr	Leu	Phe	Gln	Gln	Gly	Gln	Ala	Gly
	50					55				60					
Asn	Gln	Glu	Asn	Ser	Arg	Phe	Val	Leu	Met	Leu	Leu	Gln	Gln	Gln	Leu
65					70				75						80
Asp	Lys	Thr	Ala	Tyr	Arg	Arg	Leu	His	Asp	Asn	Met	Glu	Asn	Ala	
				85				90					95		
Phe	Lys	Ser	Ala	Thr	Phe	Asn	Gly	Cys	Arg	Ala	Phe	Val	Ala	Gly	Glu
			100					105					110		
Thr	Ile	Ala	Ala	Ala	Thr	Ala	Leu	Lys	Ala	Gly	Glu	Tyr	Gly	Val	Cys
			115				120					125			
Leu	Arg	Tyr	Gln	Pro	Ala	Tyr	Lys	Gly	Glu	His	Asp	Cys	Leu	Gly	Asn
	130					135					140				
Glu	Ile	Thr	Gly	Val	Pro	Glu	Lys	Pro	Phe	Thr	Asn	Thr	Pro	Pro	Val
145					150				155						160
Val	Val	Arg	Leu	Val	Tyr	Leu	Pro	Ser	Ala	Gly	Thr	Leu	Ser	Cys	Ser
				165					170					175	
Arg	Pro	Asp	Ile	Ala	Gln	Ser	Lys	Ser	Gly	Glu	Leu	Val	Ser	Gly	Leu
			180					185					190		
Thr	Asp	Phe	Arg	Leu	Glu	Ala	Gly	Val	Gly	Pro	Ala	Asp	Arg	Ser	Glu
	195						200					205			
Arg	Lys	Val	Ser	Ser	Phe	Val	Ala	Leu	Gln	Asp	Val	Ala	Gly	Arg	Pro
	210					215					220				
Ile	Arg	Ala	Leu	Arg	Phe	Ser	Ile	Leu	Ala	Gly	Ser	Asp	Asn	Thr	Ser
225					230					235					240
Leu	Arg	Thr	Gly	Asp	Asp	Ser	Gln	Ala	Arg	Asp	Arg	Trp	Ile	Val	Leu
				245					250					255	
Tyr	Pro	Glu	Ser	Lys	Ser	Ala	Ile	Glu	Ala	Ala	Asp	Lys	Gly	Gln	Ile
			260					265					270		
Tyr	Gln	Ile	Ala	Arg	Gly	Asn	Gln	Thr	Ile	Arg	Asn	Leu	Met	Pro	
	275						280					285			

<210> 394

<211> 423

<212> DNA

<213> Pseudomonas aeruginosa

```
<400> 394
gtagaccagg cgaacgacga caggggggagt atttgtgaag ggcttttccg gaactccggt      60
aatttcatta ccgaggcaat catgctcccc ttgttaggcg ggttgatagc gcaagcagac      120
accgtactca cccgccttga gggcagttgc cgcagcgata gtctcgccag ccacaaatgc      180
acgacagcca ttgaatgtcg cggatttgaa agcattctcc atgttgctcg cgtgaaggcg      240
acgataggct gtcttatcca gttgttgctg cagcagcata agaacgaagc ggctattttc      300
ctggttgccg gcctggcctt gctggaaaag atagttgcgt ttgttgctga tgtagatctg      360
gctgatcccc aggatcagga agctgcttat agcagagtgcc acgagcagtt ctaccatcga      420
tag                                                                    423
```

<210> 395

<211> 140

<212> PRT

<213> Pseudomonas aeruginosa

```
<400> 395
Val Asp Gln Ala Asn Asp Asp Arg Gly Ser Ile Cys Glu Gly Leu Phe
 1          5          10          15
Arg Asn Ser Gly Asn Phe Ile Thr Glu Ala Ile Met Leu Pro Phe Val
          20          25          30
Gly Gly Leu Ile Ala Gln Ala Asp Thr Val Leu Thr Arg Leu Glu Gly
          35          40          45
Ser Cys Arg Ser Asp Ser Leu Ala Ser His Lys Cys Thr Thr Ala Ile
          50          55          60
Glu Cys Arg Gly Phe Glu Ser Ile Leu His Val Val Val Val Lys Ala
65          70          75          80
Thr Ile Gly Cys Leu Ile Gln Leu Leu Leu Gln Gln His Lys Asn Glu
          85          90          95
Ala Ala Ile Phe Leu Val Ala Gly Leu Ala Leu Leu Glu Lys Ile Val
          100          105          110
Ala Phe Val Val Asp Val Asp Leu Ala Asp Pro Gln Asp Gln Glu Ala
          115          120          125
Ala Tyr Ser Glu Cys His Glu Gln Phe Tyr His Arg
          130          135          140
```

<210> 396

<211> 396

<212> DNA

<213> Pseudomonas aeruginosa

```
<400> 396
tcctggggat cagccagatc tacatcgaca acaaacgcaa ctatcttttc cagcaaggcc      60
aggccggcaa ccaggaaaat agccgcttcg ttcttatgct gctgcagcaa caactggata      120
agacagccta tcgtcgccct cagcagcaca acatggagaa tgctttcaaa tccgcgacat      180
tcaatggctg tcgtgcattt gtggctggcg agactatcgc tgcggcaact gccctcaagg      240
cgggtgagta cgggtgtctg ttgcgctatc aaccgccta caaaggggag catgattgcc      300
tcggtaatga aattaccgga gttccgaaa agcccttcac aaatactccc cctgtcgtcg      360
ttcgctggt ctacctaccg agcgcgggta ccctga                                396
```

<210> 397

<211> 131

<212> PRT

<213> Pseudomonas aeruginosa

```
<400> 397
Ser Trp Gly Ser Ala Arg Ser Thr Ser Thr Thr Asn Ala Thr Ile Phe
```


1				5				10					15			
Ser	Ser	Lys		Arg	Pro	Ala	Thr	Arg	Lys	Ile	Ala	Ala	Ser	Phe	Leu	
			20					25					30			
Cys	Cys	Cys	Ser	Asn	Asn	Trp	Ile	Arg	Gln	Pro	Ile	Val	Ala	Phe	Thr	
		35					40					45				
Thr	Thr	Thr	Trp	Arg	Met	Leu	Ser	Asn	Pro	Arg	His	Ser	Met	Ala	Val	
	50					55					60					
Val	His	Leu	Trp	Leu	Ala	Arg	Leu	Ser	Leu	Arg	Gln	Leu	Pro	Ser	Arg	
65					70					75					80	
Arg	Val	Ser	Thr	Val	Ser	Ala	Cys	Ala	Ile	Asn	Pro	Pro	Thr	Lys	Gly	
				85					90					95		
Ser	Met	Ile	Ala	Ser	Val	Met	Lys	Leu	Pro	Glu	Phe	Arg	Lys	Ser	Pro	
			100					105					110			
Ser	Gln	Ile	Leu	Pro	Leu	Ser	Ser	Phe	Ala	Trp	Ser	Thr	Tyr	Arg	Ala	
		115					120					125				
Pro	Val	Pro														
		130														

<210> 398
 <211> 306
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 398	
gttcgagtcg tcccgatatc gccagtcga aatcgggaga attggtcagt ggtctcacag	60
acttccgctt ggaagcgggg gtcgggccag cagatcgtag cgaacgcaaa gtatccagct	120
tcgtcgact acaggatgtc gccggtcgtc ctatccgagc attgcgcttc tcaatcctgg	180
caggcagcga caatacaagc ctgcgcacag gagatgatag ccaggcacgc gatcgctgga	240
tcgtccttta tcccgaagc aaaagcgcca tcgaggccgc agacaaaaggc cagatttacc	300
aatag	306

<210> 399
 <211> 101
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 399	
Val Ala Val Val Pro Ile Ser Pro Ser Arg Asn Arg Glu Asn Trp Ser	
1	5
	10
Val Val Ser Gln Thr Ser Ala Trp Lys Arg Gly Ser Gly Gln Gln Ile	15
	20
	25
Val Ala Asn Ala Lys Tyr Pro Ala Ser Ser His Tyr Arg Met Ser Pro	30
	35
	40
Val Val Leu Ser Glu His Cys Ala Ser Gln Ser Trp Gln Ala Ala Thr	45
	50
	55
Ile Gln Ala Cys Ala Gln Glu Met Ile Ala Arg His Ala Ile Ala Gly	60
65	70
	75
Ser Ser Phe Ile Pro Arg Ala Lys Ala Pro Ser Arg Pro Gln Thr Lys	80
	85
	90
Ala Arg Phe Thr Lys	95
	100

<210> 400
 <211> 630
 <212> DNA
 <213> Pseudomonas aeruginosa

```

<400> 400
ccaaaccatc aggaatctca tgccatgacc ctgcgccata cctctcgaca gcagggatcc      60
acgttggtga tctcgtggt tatcttggtg atgatcacgc tcctcgccgt ttccaacatg      120
cgcgaggtgt cactggaaaag ccgtatcacc ggcaatctca tcgaacagaa gcgcctgcgc      180
aatgcgggcg aagctgggct acgcgaaggt gaacgacgct ttttcaatac catcaagccc      240
ccagaggtcg gcagcggatg cgccgatagc aatgtcaaac ggccttgcat actgaacctg      300
agtgccctct ccgtaccccg agatgacgtg cacaacaatc cgttggcagc cctgaacggc      360
aagacagata acgccaattc acgtgtcttg atgccctacc gaggcagcga tctgaataac      420
cctacgcaga tcgacaaaga ccgcgcagtc acctggcaga ccatcacggt gcccgtggc      480
gaacagaaca acgaagcgga aaatcccagag tacggcaaca tgatgcgcgg ggtcggcacg      540
tttactactg aaaccaacag ccgcgccctc aacaaggcgg gcggagagac tgttctacag      600
gccgttcagt cacgcctgta taccaactga                                     630

```

```

<210> 401
<211> 209
<212> PRT
<213> Pseudomonas aeruginosa

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```

<400> 401
Pro Asn His Gln Glu Ser His Ala Met Thr Leu Arg His Thr Ser Arg
 1              5              10              15
Gln Gln Gly Ser Thr Leu Leu Ile Ser Leu Val Ile Leu Leu Met Ile
      20              25              30
Thr Leu Leu Ala Val Ser Asn Met Arg Glu Val Ser Leu Glu Ser Arg
      35              40              45
Ile Thr Gly Asn Leu Ile Glu Gln Lys Arg Leu Arg Asn Ala Gly Glu
      50              55              60
Ala Gly Leu Arg Glu Gly Glu Arg Arg Phe Phe Asn Thr Ile Lys Pro
      65              70              75              80
Pro Glu Val Gly Ser Gly Cys Ala Asp Ser Asn Val Lys Arg Pro Cys
      85              90              95
Ile Leu Asn Leu Ser Ala Leu Ser Val Pro Arg Asp Asp Val His Asn
      100             105             110
Asn Pro Val Ala Ala Leu Asn Gly Lys Thr Asp Asn Ala Asn Ser Arg
      115             120             125
Val Trp Met Pro Tyr Arg Gly Ser Asp Leu Asn Asn Pro Thr Gln Ile
      130             135             140
Asp Lys Asp Arg Ala Val Thr Trp Gln Thr Ile Thr Val Pro Ala Gly
      145             150             155             160
Glu Gln Asn Asn Glu Ala Glu Asn Pro Glu Tyr Gly Asn Met Met Arg
      165             170             175
Gly Val Gly Thr Phe Tyr Tyr Glu Thr Asn Ser Arg Ala Leu Asn Lys
      180             185             190
Ala Gly Gly Glu Thr Val Leu Gln Ala Val His Ala Arg Leu Tyr Thr
      195             200             205
Asn

```

```

<210> 402
<211> 378
<212> DNA
<213> Pseudomonas aeruginosa

```

```

<400> 402
ggcatccaga cacgtgaatt ggcgttatct gtcttgccgt tcagggctgc caccggattg      60
ttgtgcacgt catctcgggg tacggagagg gcactcaggt tcagtatgca aggccgtttg      120
acattgctat cggcgcaccc gctgccgacc tctgggggct tgatggtatt gaaaaagcgt      180
cgttcacctt cgcgtagccc agcttcgccc gcattgcgca ggcgcttctg ttcgatgaga      240

```

ttgccggtga	tacggctttc	cagtgacacc	tcgcgcatgt	tggaaacggc	gaggagcgtg	300
atcatcaaca	agataaccag	cgagatcaac	aacgtggatc	cctgctgtcg	agaggtatgg	360
cgcagggtca	tggcatga					378

<210> 403
 <211> 125
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 403

Gly	Ile	Gln	Thr	Arg	Glu	Leu	Ala	Leu	Ser	Val	Leu	Pro	Phe	Arg	Ala
1				5					10					15	
Ala	Thr	Gly	Leu	Cys	Thr	Ser	Ser	Arg	Gly	Thr	Glu	Arg	Ala	Leu	
		20					25					30			
Arg	Phe	Ser	Met	Gln	Gly	Arg	Leu	Thr	Leu	Leu	Ser	Ala	His	Pro	Leu
		35					40					45			
Pro	Thr	Ser	Gly	Gly	Leu	Met	Val	Leu	Lys	Lys	Arg	Arg	Ser	Pro	Ser
		50				55					60				
Arg	Ser	Pro	Ala	Ser	Pro	Ala	Leu	Arg	Arg	Arg	Phe	Cys	Ser	Met	Arg
65				70					75					80	
Leu	Pro	Val	Ile	Arg	Leu	Ser	Ser	Asp	Thr	Ser	Arg	Met	Leu	Glu	Thr
			85						90					95	
Ala	Arg	Ser	Val	Ile	Ile	Asn	Lys	Ile	Thr	Ser	Glu	Ile	Asn	Asn	Val
			100					105					110		
Asp	Pro	Cys	Cys	Arg	Glu	Val	Trp	Arg	Arg	Val	Met	Ala			
		115					120					125			

<210> 404
 <211> 3597
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 404

tgccgcggtg	cggcacgttc	tactacgaaa	ccaacagccg	cgccctcaac	aaggcggg	60
gagagactgt	tctacaggcc	gttcatgcac	gcctgtatac	caactgactg	gagccagcgc	120
atgatccacc	agattacccg	cgcaggaaaa	agcctgctgg	ctgcagggtg	caccctgagc	180
atcctgttcg	cctctgacag	ttatgccgcc	acggccctga	atgtcagcca	gcaacccctg	240
ttcctaacc	agggcggtgc	tcccaacctg	ctgttcactc	tagatgactc	aggcagtatg	300
gcctgggctt	acgtgcccga	cggtattagc	gggaatagcg	gcagagcggg	acgttccagc	360
gattacaacg	caactgtacta	caaccccgat	tatgcttacc	aagtgcctaa	gaaattgaca	420
ctgtcaggcg	atcagatcat	cgtttccgac	tatccagtgc	cacgcttcac	agcagcctgg	480
caggatggct	acgcccgaag	ctccaccacc	aacctgagca	ataactatcg	ccctcaatgg	540
ggaaccggct	ggcttggttg	catcgatagc	agctgcaata	ccgggagagc	ttattactat	600
acttataagg	taagcgctag	ctgccctgca	cagccggtga	gcagctccaa	ctcctgttat	660
acctacaatg	ctcttcctac	cagtcaggaa	agcaactttg	cgatatggta	ctcctactat	720
cgcaaccgca	tcctggccac	aaagaccgct	gccaacctgg	ccttttacag	cctgccggaa	780
aacgtgcgtc	tcacttggtg	ggccctgaac	acctgtagca	tcggcgccaa	cagcagaagc	840
tgccaaaaca	atgccctgct	ccaattcaac	aagcagcaca	aaatcaattt	cttcaattgg	900
ctggcggaaca	gcccggccag	cggcggtact	cctctgcatg	cggctcttga	ccgagccgga	960
cgcttcttgc	aaaccaacgg	cacagcttat	accaccgaag	acggaaaagc	atattcctgc	1020
cgggcccagct	atcacatcat	gatgaccgac	ggtatctgga	acggtcggaa	cgtcaccccc	1080
ggcaatctcg	acaaccagaa	ccagaccttt	cctgatagca	ccctctatag	gccacagccc	1140
ccttatgccg	acagcaatgc	cagctcattg	gctgacctgg	ctttcaaata	ctggaccaca	1200
gacttacgtc	ccagcatcga	caatgacctg	aagcctttca	tggcctacaa	gagtggggac	1260
gattccaagg	attactggga	ccctcgcaac	aaccagccca	cttggcaaca	catgggtcaac	1320
tttaccggtg	gcctaggtct	ttcctattcg	ctcacattga	actctgcacc	aacttggaca	1380
ggcagcacct	ttggcaacta	cgaggagttg	atggctggaa	gcaaggcttg	gcccagcgtc	1440
gataacgacg	ccgcacccgg	taacgtctac	gacctctggc	atgcagctat	caactctcgt	1500

```

ggagacttct ttagcgcgga atcaccggac tctctgggtc aggctttcaa taagatcctg 1560
acacggattt ccgagcgcaa cacctcctcc tccaaaccag caatgacttc cgcgctgcag 1620
gatgacggaa ccggcgacaa gctgatccgc tacagctacc agtccagctt tgccagtgcag 1680
aagaactggg cgggcgacct tatacgttac aaggtggagt cgacttcac cggttcgacc 1740
aaaaccagg aatggagcgc cggcgactg ctggacaacc gagctccgc taccgtaat 1800
atttacatcg ccagcaatag cggaaaccaac cgccttaagc ctttcacatg gagcaatatt 1860
gagggaaagtc agttagccac ttggctgaac cgcaaccggg acaaggacaa tcaggccgac 1920
accaaaggag cacagcgggt cgacttcac cgtggccagc agaatatgga tggattccgg 1980
caacgacagg cgggtgttagg ggacatcgtg cactcgtctc cagccgtggg cggaccggcc 2040
caatacctca cttatctggc caaccccatc gaaccagcg gcgactacgg cacattcaag 2100
acagaggcag accagcgcag ccctagagtt tatgttggat ccaacgatgg catgttgcag 2160
ggtttcaaca tcaaaaccgg cgtggaagag ttcgctttca cagggcgggtg cccaccaata tttcgctgcag 2220
aagcttaaca agcttaccgg catcagctac cagggcgggtg cccaccaata tttcgctgcag 2280
gctacaccgg tctgcagcga tgcctttttc gatggagctt ggcacactgt tctgatcgga 2340
acgcttgggtg ctggaggtcg cggcctgttc gcactcgtatg taaccaagcc ggacgatgtc 2400
aagctgcttt gggaatacga tagcagtacc gactcggacc ttggttacac cttctccaaa 2460
cctaccgtag ccagactgca cagcggacaa tgggcagtag ttaccggcaa cggctatgga 2520
agcgataatg acaaggcagc tttactgctg attgatttga aaaagggaac gctgatcaag 2580
aagctggaag tccaaagcga gcgcggaata gccaatggcc tatcgacgcc tcgcctggct 2640
gataacaaca gcgatggcat tgctgactac gcctatgctg gcgatctgca gggaaatatac 2700
tggcgcttcg atttgatcgg caataccggc aacgacgacc cagacacaaa tacctctatc 2760
aatcccttca agcccgga tgtagatcct tctgctttca gagtatcgtt cagcggcgcc 2820
ccgcttttcc gtgctcgcgc cgacaacaat actcgtcagc ccatcacggc tccgcctacc 2880
ttggtacgcc atcctagccg taagggctac atcgtcatcg taggtacagg aaaatacttc 2940
gaggacgatg acgctcaggc cgataccagc cgagccatga cgctctatgg tatctgggat 3000
cgccagacca agggcgaaag cgcaaacagt accccaacca tcgaccgcaa cgccctcaca 3060
gcccacaacca tgacaacaga ggcgaaactcc acattcggtg gcgtgaacag gaatattcgg 3120
cttattagcc aaaaccgggt gaagtggtag aaagacggag caaccggtag cgcgaaactcg 3180
gatgtggcta gctatggctg gcgactgaat ctggaggtca atagcagcaa gaaaggcgaa 3240
atgatgatcg aagatatgtt cgctgccggc caagtgtctt tattgcagac cttgacaccg 3300
aacgacgacc cttgtgacag cggctctacc agctggacct acggcctcaa tccataact 3360
ggcggacgta ccagtttcac cgtcttcgat ctcaaactgt cgggtatagt ggactctggc 3420
tcggattaca acggctcggg cgtatccgcc ttccaacagg atggactagg tggcttggcc 3480
attaccaga acgaacagcg tcaatccgag gcttgcactg gtgatgagtg catcatcttc 3540
aaccacagcg acaagagtaa cggacgacaa acctggcggg tcgtcgagga gaaatga 3597

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<210> 405
 <211> 1198
 <212> PRT
 <213> *Pseudomonas aeruginosa*

```

<400> 405
Cys Ala Gly Ser Ala Arg Ser Thr Thr Lys Pro Thr Ala Ala Pro Ser
 1          5          10          15
Thr Arg Arg Ala Glu Arg Leu Phe Tyr Arg Pro Phe Met His Ala Cys
 20          25          30
Ile Pro Thr Asp Trp Ser Gln Arg Met Ile His Gln Ile Thr Arg Ala
 35          40          45
Gly Lys Ser Leu Leu Ala Ala Gly Cys Thr Leu Ser Ile Leu Phe Ala
 50          55          60
Ser Asp Ser Tyr Ala Ala Thr Ala Leu Asn Val Ser Gln Gln Pro Leu
 65          70          75          80
Phe Leu Thr Gln Gly Val Ala Pro Asn Leu Leu Phe Thr Leu Asp Asp
 85          90          95
Ser Gly Ser Met Ala Trp Ala Tyr Val Pro Asp Gly Ile Ser Gly Asn
100          105          110
Ser Gly Arg Ala Gly Arg Ser Ser Asp Tyr Asn Ala Leu Tyr Tyr Asn
115          120          125
Pro Asp Tyr Ala Tyr Gln Val Pro Lys Lys Leu Thr Leu Ser Gly Asp

```

130		135		140
Gln Ile Ile Val Ser Asp Tyr Pro Val Pro Arg Phe Thr Ala Ala Trp				
145		150		155
Gln Asp Gly Tyr Ala Gln Gly Ser Thr Thr Asn Leu Ser Asn Asn Tyr				
	165		170	
Arg Pro Gln Trp Gly Thr Gly Trp Leu Gly Cys Ile Asp Ser Ser Cys				
	180		185	
Asn Thr Gly Arg Ala Tyr Tyr Tyr Thr Tyr Lys Val Ser Ala Ser Cys				
	195		200	
Pro Ala Gln Pro Val Ser Ser Ser Asn Ser Cys Tyr Thr Tyr Asn Ala				
	210		215	
Leu Pro Thr Ser Gln Glu Ser Asn Phe Ala Ile Trp Tyr Ser Tyr Tyr				
225		230		235
Arg Asn Arg Ile Leu Ala Thr Lys Thr Ala Ala Asn Leu Ala Phe Tyr				
	245		250	
Ser Leu Pro Glu Asn Val Arg Leu Thr Trp Gly Ala Leu Asn Thr Cys				
	260		265	
Ser Ile Gly Ala Asn Ser Arg Ser Cys Gln Asn Asn Ala Leu Leu Gln				
	275		280	
Phe Asn Lys Gln His Lys Ile Asn Phe Phe Asn Trp Leu Ala Asn Ser				
290		295		300
Pro Ala Ser Gly Gly Thr Pro Leu His Ala Ala Leu Asp Arg Ala Gly				
305		310		315
Arg Phe Leu Gln Thr Asn Gly Thr Ala Tyr Thr Thr Glu Asp Gly Lys				
	325		330	
Thr Tyr Ser Cys Arg Ala Ser Tyr His Ile Met Met Thr Asp Gly Ile				
	340		345	
Trp Asn Gly Arg Asn Val Thr Pro Gly Asn Leu Asp Asn Gln Asn Gln				
	355		360	
Thr Phe Pro Asp Ser Thr Leu Tyr Arg Pro Gln Pro Pro Tyr Ala Asp				
	370		375	
Ser Asn Ala Ser Ser Leu Ala Asp Leu Ala Phe Lys Tyr Trp Thr Thr				
385		390		395
Asp Leu Arg Pro Ser Ile Asp Asn Asp Leu Lys Pro Phe Met Ala Tyr				
	405		410	
Lys Ser Gly Asp Asp Ser Lys Asp Tyr Trp Asp Pro Arg Asn Asn Pro				
	420		425	
Ala Thr Trp Gln His Met Val Asn Phe Thr Val Gly Leu Gly Leu Ser				
	435		440	
Tyr Ser Leu Thr Leu Asn Ser Ala Pro Thr Trp Thr Gly Ser Thr Phe				
	450		455	
Gly Asn Tyr Glu Glu Leu Met Ala Gly Ser Lys Ala Trp Pro Ser Val				
465		470		475
Asp Asn Asp Ala Ala Pro Gly Asn Val Tyr Asp Leu Trp His Ala Ala				
	485		490	
Ile Asn Ser Arg Gly Asp Phe Phe Ser Ala Glu Ser Pro Asp Ser Leu				
	500		505	
Val Gln Ala Phe Asn Lys Ile Leu Thr Arg Ile Ser Glu Arg Asn Thr				
	515		520	
Ser Ser Ser Lys Pro Ala Met Thr Ser Ala Leu Gln Asp Asp Gly Thr				
	530		535	
Gly Asp Lys Leu Ile Arg Tyr Ser Tyr Gln Ser Ser Phe Ala Ser Asp				
545		550		555
Lys Asn Trp Ala Gly Asp Leu Ile Arg Tyr Lys Val Glu Ser Thr Ser				
	565		570	
Thr Gly Ser Thr Lys Thr Gln Glu Trp Ser Ala Gly Ala Leu Leu Asp				
	580		585	
Asn Arg Ala Pro Ala Thr Arg Asn Ile Tyr Ile Ala Ser Asn Ser Gly				
	595		600	
			605	

Thr	Asn	Arg	Leu	Lys	Pro	Phe	Thr	Trp	Ser	Asn	Ile	Glu	Gly	Ser	Gln
610						615					620				
Leu	Ala	Thr	Trp	Leu	Asn	Arg	Asn	Pro	Asp	Lys	Asp	Asn	Gln	Ala	Asp
625					630					635					640
Thr	Lys	Gly	Ala	Gln	Arg	Val	Asp	Phe	Ile	Arg	Gly	Gln	Gln	Asn	Met
				645					650					655	
Asp	Gly	Phe	Arg	Gln	Arg	Gln	Ala	Val	Leu	Gly	Asp	Ile	Val	His	Ser
			660					665					670		
Ser	Pro	Ala	Val	Val	Gly	Pro	Ala	Gln	Tyr	Leu	Thr	Tyr	Leu	Ala	Asn
		675					680					685			
Pro	Ile	Glu	Pro	Ser	Gly	Asp	Tyr	Gly	Thr	Phe	Lys	Thr	Glu	Ala	Asp
	690					695					700				
Gln	Arg	Ser	Pro	Arg	Val	Tyr	Val	Gly	Ser	Asn	Asp	Gly	Met	Leu	His
705					710					715					720
Gly	Phe	Asn	Ile	Lys	Thr	Gly	Val	Glu	Glu	Phe	Ala	Phe	Ile	Pro	Thr
				725					730					735	
Ala	Val	Phe	Glu	Lys	Leu	Asn	Lys	Leu	Thr	Gly	Ile	Ser	Tyr	Gln	Gly
			740					745					750		
Gly	Ala	His	Gln	Tyr	Phe	Val	Asp	Ala	Thr	Pro	Val	Val	Ser	Asp	Ala
		755					760					765			
Phe	Phe	Asp	Gly	Ala	Trp	His	Thr	Val	Leu	Ile	Gly	Thr	Leu	Gly	Ala
	770					775					780				
Gly	Gly	Arg	Gly	Leu	Phe	Ala	Leu	Asp	Val	Thr	Lys	Pro	Asp	Asp	Val
785					790					795					800
Lys	Leu	Leu	Trp	Glu	Tyr	Asp	Ser	Ser	Thr	Asp	Ser	Asp	Leu	Gly	Tyr
				805					810					815	
Thr	Phe	Ser	Lys	Pro	Thr	Val	Ala	Arg	Leu	His	Ser	Gly	Gln	Trp	Ala
			820					825					830		
Val	Val	Thr	Gly	Asn	Gly	Tyr	Gly	Ser	Asp	Asn	Asp	Lys	Ala	Ala	Leu
		835					840					845			
Leu	Leu	Ile	Asp	Leu	Lys	Lys	Gly	Thr	Leu	Ile	Lys	Lys	Leu	Glu	Val
	850					855					860				
Gln	Ser	Glu	Arg	Gly	Ile	Ala	Asn	Gly	Leu	Ser	Thr	Pro	Arg	Leu	Ala
865					870					875					880
Asp	Asn	Asn	Ser	Asp	Gly	Ile	Ala	Asp	Tyr	Ala	Tyr	Ala	Gly	Asp	Leu
				885					890					895	
Gln	Gly	Asn	Ile	Trp	Arg	Phe	Asp	Leu	Ile	Gly	Asn	Thr	Arg	Asn	Asp
			900					905					910		
Asp	Pro	Asp	Thr	Asn	Thr	Ser	Ile	Asn	Pro	Phe	Lys	Pro	Gly	Asp	Val
		915					920					925			
Asp	Pro	Ser	Ala	Phe	Arg	Val	Ser	Phe	Ser	Gly	Ala	Pro	Leu	Phe	Arg
		930				935					940				
Ala	Arg	Ala	Asp	Asn	Asn	Thr	Arg	Gln	Pro	Ile	Thr	Ala	Pro	Pro	Thr
945					950					955					960
Leu	Val	Arg	His	Pro	Ser	Arg	Lys	Gly	Tyr	Ile	Val	Ile	Val	Gly	Thr
			965						970					975	
Gly	Lys	Tyr	Phe	Glu	Asp	Asp	Asp	Ala	Gln	Ala	Asp	Thr	Ser	Arg	Ala
			980					985					990		
Met	Thr	Leu	Tyr	Gly	Ile	Trp	Asp	Arg	Gln	Thr	Lys	Gly	Glu	Ser	Ala
		995					1000					1005			
Asn	Ser	Thr	Pro	Thr	Ile	Asp	Arg	Asn	Ala	Leu	Thr	Ala	Gln	Thr	Met
	1010					1015						1020			
Thr	Thr	Glu	Ala	Asn	Ser	Thr	Phe	Gly	Ser	Val	Asn	Arg	Asn	Ile	Arg
1025					1030					1035					104
Leu	Ile	Ser	Gln	Asn	Pro	Val	Lys	Trp	Tyr	Lys	Asp	Gly	Ala	Thr	Gly
				1045					1050					1055	
Thr	Ala	Asn	Ser	Asp	Val	Ala	Ser	Tyr	Gly	Trp	Arg	Leu	Asn	Leu	Glu
			1060					1065					1070		
Val	Asn	Ser	Ser	Lys	Lys	Gly	Glu	Met	Met	Ile	Glu	Asp	Met	Phe	Ala

1075	1080	1085
Ala Gly Gln Val Leu Leu Leu Gln Thr Leu Thr	Pro Asn Asp Asp Pro	
1090	1095	1100
Cys Asp Ser Gly Ser Thr Ser Trp Thr Tyr Gly Leu Asn Pro Tyr Thr		
1105	1110	1115
Gly Gly Arg Thr Ser Phe Thr Val Phe Asp Leu Lys Arg Ala Gly Ile		
1125	1130	1135
Val Asp Ser Gly Ser Asp Tyr Asn Gly Ser Val Val Ser Ala Phe Gln		
1140	1145	1150
Gln Asp Gly Leu Gly Gly Leu Ala Ile Thr Gln Asn Glu Gln Arg Gln		
1155	1160	1165
Ser Glu Ala Cys Thr Gly Asp Glu Cys Ile Ile Phe Asn Pro Ser Asp		
1170	1175	1180
Lys Ser Asn Gly Arg Gln Thr Trp Arg Val Val Glu Glu Lys		
1185	1190	1195

<210> 406
 <211> 741
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 406	
gctggcattg ctgtcggcat aaggggggctg tggcctatag aggggtgctat caggaaaggt	60
ctggttcttg ttgtcgagat tgccgggggt gacgttccga ccgttccaga taccgtcggg	120
catcatgatg tgatagctgg cccggcagga atatgtcttt ccgtcttcgg tggataaagc	180
tgtgccgttg gtttgcaaga agcgtccggc tccgtcaaga gccgcatgca gaggagtacc	240
gccgtggcc gggctgttcg ccagccaatt gaagaaattg attttgtgct gcttggtgaa	300
ttggagcagg gcattgtttt ggcagcttct gctgttggcg ccgatgctac aggtgttcag	360
ggcccccaa gtgagacgca cgttttccgg caggctgtaa aaggccagggt tggcagcggg	420
ctttgtggcc aggatgcggt tgcgatagta ggagtaccat atcgcaaagt tgctttcctg	480
actggttagga agagcattgt aggtataaca ggagttggag ctgctcaccg gctgtgcagg	540
gcagctagcg cttaccttat aagtatagta ataagctctc ccggtattgc agctgctatc	600
gatgcaacca agccagccgg ttccccattg agggcgatag ttattgctca ggttggtggg	660
ggagccttgg gcgtagccat cctgccaggc tgctgtgaag cgtggcactg gatagtcgga	720
aacgatgatc tgatcgctg a	741

<210> 407
 <211> 246
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 407	
Ala Gly Ile Ala Val Gly Ile Arg Gly Leu Trp Pro Ile Glu Gly Ala	
1 5 10 15	
Ile Arg Lys Gly Leu Val Leu Val Val Glu Ile Ala Gly Gly Asp Val	
20 25 30	
Pro Thr Val Pro Asp Thr Val Gly His His Asp Val Ile Ala Gly Pro	
35 40 45	
Ala Gly Ile Cys Leu Ser Val Phe Gly Gly Ile Ser Cys Ala Val Gly	
50 55 60	
Leu Gln Glu Ala Ser Gly Ser Val Lys Ser Arg Met Gln Arg Ser Thr	
65 70 75 80	
Ala Ala Gly Arg Ala Val Arg Gln Pro Ile Glu Glu Ile Asp Phe Val	
85 90 95	
Leu Leu Val Glu Leu Glu Gln Gly Ile Val Leu Ala Ala Ser Ala Val	
100 105 110	
Gly Ala Asp Ala Thr Gly Val Gln Gly Pro Pro Ser Glu Thr His Val	
115 120 125	

Phe Arg Gln Ala Val Lys Gly Gln Val Gly Ser Gly Leu Cys Gly Gln
 130 135 140
 Asp Ala Val Ala Ile Val Gly Val Pro Tyr Arg Lys Val Ala Phe Leu
 145 150 155 160
 Thr Gly Arg Lys Ser Ile Val Gly Ile Thr Gly Val Gly Ala Ala His
 165 170 175
 Arg Leu Cys Arg Ala Ala Ser Ala Tyr Leu Ile Ser Ile Val Ile Ser
 180 185 190
 Ser Pro Gly Ile Ala Ala Ala Ile Asp Ala Thr Lys Pro Ala Gly Ser
 195 200 205
 Pro Leu Arg Ala Ile Val Ile Ala Gln Val Gly Gly Gly Ala Leu Gly
 210 215 220
 Val Ala Ile Leu Pro Gly Cys Cys Glu Ala Trp His Trp Ile Val Gly
 225 230 235 240
 Asn Asp Asp Leu Ile Ala
 245

<210> 408
 <211> 351
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 408
 ctgacttccc tcaatattgc tccatgtgaa aggcttaagg cggttgggttc cgctattgct 60
 ggcgatgtaa atattacggg tagcgggagc tcggttggtcc agcagtgcgc cggcgctcca 120
 ttcctggggtt ttggtcgaac cggtggaagt cgactccacc ttgtaacgta taaggtcgcc 180
 cgcccagttc ttgtcactgg caaagctgga ctggtagctg tagcggatca gcttgtcgcc 240
 ggttccgtca tcctgcagcg cggaagtcac tgctggtttg gaggaggagg tgttgcgctc 300
 ggaaatccgt gtcaggatct tattgaaagc ctgaaccaga gagtccgggtg a 351

<210> 409
 <211> 116
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 409
 Leu Thr Ser Leu Asn Ile Ala Pro Cys Glu Arg Leu Lys Ala Val Gly
 1 5 10 15
 Ser Ala Ile Ala Gly Asp Val Asn Ile Thr Gly Ser Gly Ser Ser Val
 20 25 30
 Val Gln Gln Cys Ala Gly Ala Pro Phe Leu Gly Phe Gly Arg Thr Gly
 35 40 45
 Gly Ser Arg Leu His Leu Val Thr Tyr Lys Val Ala Arg Pro Val Leu
 50 55 60
 Val Thr Gly Lys Ala Gly Leu Val Ala Val Ala Asp Gln Leu Val Ala
 65 70 75 80
 Gly Ser Val Ile Leu Gln Arg Gly Ser His Cys Trp Phe Gly Gly Gly
 85 90 95
 Gly Val Ala Leu Gly Asn Pro Cys Gln Asp Leu Ile Glu Ser Leu Asn
 100 105 110
 Gln Arg Val Arg
 115

<210> 410
 <211> 546
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 410
agctgccttg tcattatcgc ttccatagcc gttgccggta actactgccc attgtccgct 60
gtgcagtctg gctacggtag gtttgagaaa ggtgtaacca aggtccgagt cggtagctgct 120
atcgtattcc caaagcagct tgacatcgtc cggcttggtt acatcgagtg cgaacaggcc 180
gcgacctcca gcaccaagcg ttccgatcag aacagtgtgc caagctccat cgaaaaaggc 240
atcgctgacg accggtgtag cgtcgacgaa atattgggtg gcaccgccct ggtagctgat 300
gccggtaaagc ttgttaagct tttcgaatac tgctgtaggg atgaaagcga actcttccac 360
gccggttttg atgttgaaac catgcaacat gccatcgttg gatccaacat aaactctagg 420
gctgcgctgg tctgcctctg tcttgaatgt gccgtagtcg ccgctggggt cgatgggggt 480
ggccagataa gtgaggtatt gggccgggtc gaccacggct ggagacgagt gcacgatgtc 540
ccctaa 546

<210> 411
<211> 181
<212> PRT
<213> Pseudomonas aeruginosa

<400> 411
Ser Cys Leu Val Ile Ile Ala Ser Ile Ala Val Ala Gly Asn Tyr Cys
1 5 10 15
Pro Leu Ser Ala Val Gln Ser Gly Tyr Gly Arg Phe Gly Glu Gly Val
20 25 30
Thr Lys Val Arg Val Gly Thr Ala Ile Val Phe Pro Lys Gln Leu Asp
35 40 45
Ile Val Arg Leu Gly Tyr Ile Glu Cys Glu Gln Ala Ala Thr Ser Ser
50 55 60
Thr Lys Arg Ser Asp Gln Asn Ser Val Pro Ser Ser Ile Glu Lys Gly
65 70 75 80
Ile Ala Asp Asp Arg Cys Ser Val Asp Glu Ile Leu Val Gly Thr Ala
85 90 95
Leu Val Ala Asp Ala Gly Lys Leu Val Lys Leu Phe Glu Tyr Cys Cys
100 105 110
Arg Asp Glu Ser Glu Leu Phe His Ala Gly Phe Asp Val Glu Thr Met
115 120 125
Gln His Ala Ile Val Gly Ser Asn Ile Asn Ser Arg Ala Ala Leu Val
130 135 140
Cys Leu Cys Leu Glu Cys Ala Val Val Ala Ala Gly Phe Asp Gly Val
145 150 155 160
Gly Gln Ile Ser Glu Val Leu Gly Arg Ser Asp His Gly Trp Arg Arg
165 170 175
Val His Asp Val Pro
180

<210> 412
<211> 336
<212> DNA
<213> Pseudomonas aeruginosa

<400> 412
gggacatcgt gcaactcgtct ccagccgtgg tcggaccggc ccaatacctc acttatctgg 60
ccaaccccat cgaaccagc ggcgactacg gcacattcaa gacagaggca gaccagcgca 120
gccctagagt ttatgttgga tccaacgatg gcatgttgca tggtttcaac atcaaaaccg 180
gcgtggaaga gttcgctttc atccctacag cagtattcga aaagcttaac aagcttaccg 240
gcatcagcta ccagggcggt gccaccaat atttcgtcga cgctacaccg gtcgtcagcg 300
atgccttttt cgatggagct tggcacactg ttctga 336

<210> 413
<211> 111

<212> PRT
 <213> Pseudomonas aeruginosa

<400> 413
 Gly Thr Ser Cys Thr Arg Leu Gln Pro Trp Ser Asp Arg Pro Asn Thr
 1 5 10 15
 Ser Leu Ile Trp Pro Thr Pro Ser Asn Pro Ala Ala Thr Thr Ala His
 20 25 30
 Ser Arg Gln Arg Gln Thr Ser Ala Ala Leu Glu Phe Met Leu Asp Pro
 35 40 45
 Thr Met Ala Cys Cys Met Val Ser Thr Ser Lys Pro Ala Trp Lys Ser
 50 55 60
 Ser Leu Ser Ser Leu Gln Tyr Ser Lys Ser Leu Thr Ser Leu Pro
 65 70 75 80
 Ala Ser Ala Thr Arg Ala Val Pro Thr Asn Ile Ser Ser Thr Leu His
 85 90 95
 Arg Ser Ser Ala Met Pro Phe Ser Met Glu Leu Gly Thr Leu Phe
 100 105 110

<210> 414
 <211> 660
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 414
 aagcacttg cccgcagcga acatatcttc gatcatcatt tcgcctttct tgctgctatt 60
 gacctccaga ttccagtcgcc agccatagct agccacatcc gagttcgcgg taccgggtgc 120
 tccgtctttg taccacttca ccgggttttg gctaataagc cgaatattcc tggtcacgct 180
 accgaatgtg gagttcgcc ctgttgatcat ggtttgggct gtgagggcgt tgcgggtcgat 240
 gggtgggta ctgtttgcgc ttctgccttc ggtctggcga tcccagatac catagagcgt 300
 catggctcgg ctggtatcgg cctgagcgtc atcgtcctcg aagtattttc ctgtacctac 360
 gatgacgatg tagcccttac ggctaggatg gcgtaccaag gtaggcggag ccgtgatggg 420
 ctgacgagta ttgttgtcgg cgcgagcacg gaaaagcggg gcgccgctga acgatactct 480
 gaaagcagaa ggatctacat ctccgggctt gaagggattg atagaggtat ttgtgtctgg 540
 gtcgtcgttg cgggtattgc cgatcaaadc gaagcgccag atatttcctt gcagatcgcc 600
 agcataggcg tagtcagcaa tgccatcgct gttgttatca gccaggcgag gcgtcgatag 660

<210> 415
 <211> 219
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 415
 Lys His Leu Ala Gly Ser Glu His Ile Phe Asp His His Phe Ala Phe
 1 5 10 15
 Leu Ala Ala Ile Asp Leu Gln Ile Gln Ser Pro Ala Ile Ala Ser His
 20 25 30
 Ile Arg Val Arg Gly Thr Gly Cys Ser Val Phe Val Pro Leu His Arg
 35 40 45
 Val Leu Ala Asn Lys Pro Asn Ile Pro Val His Ala Thr Glu Cys Gly
 50 55 60
 Val Arg Leu Cys Cys His Gly Leu Gly Cys Glu Gly Val Ala Val Asp
 65 70 75 80
 Gly Trp Gly Thr Val Cys Ala Phe Ala Leu Gly Leu Ala Ile Pro Asp
 85 90 95
 Thr Ile Glu Arg His Gly Ser Ala Gly Ile Gly Leu Ser Val Ile Val
 100 105 110

Leu	Glu	Val	Phe	Ser	Cys	Thr	Tyr	Asp	Asp	Asp	Val	Ala	Leu	Thr	Ala
		115					120					125			
Arg	Met	Ala	Tyr	Gln	Gly	Arg	Arg	Ser	Arg	Asp	Gly	Leu	Thr	Ser	Ile
	130					135					140				
Val	Val	Gly	Ala	Ser	Thr	Glu	Lys	Arg	Gly	Ala	Ala	Glu	Arg	Tyr	Ser
145					150					155					160
Glu	Ser	Arg	Arg	Ile	Tyr	Ile	Ser	Gly	Leu	Glu	Gly	Ile	Asp	Arg	Gly
				165					170					175	
Ile	Cys	Val	Trp	Val	Val	Val	Ala	Gly	Ile	Ala	Asp	Gln	Ile	Glu	Ala
		180						185					190		
Pro	Asp	Ile	Ser	Leu	Gln	Ile	Ala	Ser	Ile	Gly	Val	Val	Ser	Asn	Ala
	195					200						205			
Ile	Ala	Val	Val	Ile	Ser	Gln	Ala	Arg	Arg	Arg					
	210					215									

<210> 416
 <211> 327
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 416	
ccggcgagtc ctgttggttg acacgggttg gcaagcgata tgtctgcca tcgactacta	60
ccagaccggc ggcaggatga acatcctcga ccacgcccac attctcgaac gtattcgtgg	120
cactcaaggc aaagggttgg caagccagag ctagagctgc aagagctgtg gcgagaagac	180
gtaaggggtt catgttcatt tctcctcgac gacccgccag gtttgcgtc cgttactctt	240
gtcgtctggg ttgaagatga tgcactcatc accagtgcaa gcctcggatt gacgctgttc	300
gttctgggta atggccaagc cacctag	327

<210> 417
 <211> 108
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 417	
Pro Ala Ser Pro Val Val Gly His Gly Trp Ala Ser Asp Met Ser Ala	
1 5 10 15	
His Arg Leu Leu Pro Asp Arg Arg Gln Asp Glu His Pro Arg Pro Arg	
20 25 30	
Pro His Ser Arg Thr Tyr Ser Trp His Ser Arg Gln Arg Leu Gly Lys	
35 40 45	
Pro Glu Leu Glu Leu Gln Glu Leu Trp Arg Glu Asp Val Arg Gly Ser	
50 55 60	
Cys Ser Phe Leu Leu Asp Asp Pro Pro Gly Leu Ser Ser Val Thr Leu	
65 70 75 80	
Val Ala Gly Val Glu Asp Asp Ala Leu Ile Thr Ser Ala Ser Leu Gly	
85 90 95	
Leu Thr Leu Phe Val Leu Gly Asn Gly Gln Ala Thr	
100 105	

<210> 418
 <211> 879
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 418	
gtggcttggc cattaccag aacgaacagc gtcaatccga ggcttgact ggtgatgagt	60
gcatcatctt caacccagc gacaagagta acggacgaca aacctggcgg gtcgtcgagg	120

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agaaatgaac atgaaccctt tacgtcttct cgccacagct cttgcagctc tagctctggc 180
ttgccaacc tttgccttga gtgccacgaa tacgttcgag aatgtgggcg tggtcgagga 240
tgttcatcct gccgcgggtc tggtagtagt cgatgggcag acatatcgct tgccaaccg 300
tgtccaacaa caggactcgc cggtcattat cttggtacgt cagggacaga cagtgtcttt 360
ctccggcaaa ctcaccagcg acctgccaga aatcgagtcg ttctacatta tcaagcaggc 420
ccctctcggt cccttcggat cggagcagca acaatgaagt cgaacagagg cttcactctc 480
atcgagttga tgatcgtcgt agtaatcatc gctattcttg ctggtatcgc ctacccagc 540
tacgacgaat acgtgaagcg cgggaatcgc accgaaggac aggcattact cagcgaagca 600
gccgctactc aagagcgcta tttttcacag aacaatactt atatcactac ccaagccgac 660
atcggcaagc tgcataatgc caacacatcg ggcaccacag tgaagtcctc cacaggcaaa 720
tacagcctta ccgtcgatac ggtagccaac gacggagggt atcgcttat cgctaaccag 780
gcattcaacg atcttgattg tggcaacctg accttgaccg ccaacggcga gaaaggccgg 840
actggaagca agaagagcgt tgcagaatgc tggcgctaa 879

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<210> 419
<211> 292
<212> PRT
<213> Pseudomonas aeruginosa

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<400> 419
Val Ala Trp Pro Leu Pro Arg Thr Asn Ser Val Asn Pro Arg Leu Ala
1 5 10 15
Leu Val Met Ser Ala Ser Ser Ser Thr Pro Ala Thr Arg Val Thr Asp
20 25 30
Asp Lys Pro Gly Gly Ser Ser Arg Arg Asn Glu His Glu Pro Leu Thr
35 40 45
Ser Ser Arg His Ser Ser Cys Ser Ser Ser Ser Gly Leu Pro Asn Leu
50 55 60
Cys Leu Glu Cys His Glu Tyr Val Arg Glu Cys Gly Arg Gly Arg Gly
65 70 75 80
Cys Ser Ser Cys Arg Arg Ser Gly Ser Ser Arg Trp Ala Asp Ile Ser
85 90 95
Leu Ala Gln Pro Cys Pro Thr Thr Gly Leu Ala Gly His Ile Leu Gly
100 105 110
Thr Ser Gly Thr Asp Ser Val Phe Leu Arg Gln Thr His Gln Arg Pro
115 120 125
Ala Arg Asn Arg Val Val Leu His Tyr Gln Ala Gly Pro Ser Arg Ser
130 135 140
Leu Arg Ile Gly Ala Ala Thr Met Lys Ser Asn Arg Gly Phe Thr Leu
145 150 155 160
Ile Glu Leu Met Ile Val Val Val Ile Ile Ala Ile Leu Ala Gly Ile
165 170 175
Ala Tyr Pro Ser Tyr Asp Glu Tyr Val Lys Arg Gly Asn Arg Thr Glu
180 185 190
Gly Gln Ala Leu Leu Ser Glu Ala Ala Ala Thr Gln Glu Arg Tyr Phe
195 200 205
Ser Gln Asn Asn Thr Tyr Ile Thr Thr Gln Ala Asp Ile Gly Lys Leu
210 215 220
His Met Arg Asn Thr Ser Gly Thr Thr Val Lys Ser Ser Thr Gly Lys
225 230 235 240
Tyr Ser Leu Thr Val Asp Thr Val Ala Asn Asp Gly Gly Tyr Arg Leu
245 250 255
Ile Ala Asn Gln Ala Phe Asn Asp Leu Asp Cys Gly Asn Leu Thr Leu
260 265 270
Thr Ala Asn Gly Glu Lys Gly Arg Thr Gly Ser Lys Lys Ser Val Ala
275 280 285
Glu Cys Trp Arg
290

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<210> 420
 <211> 366
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 420
 cggacgacaa acctggcggg tcgtcgagga gaaatgaaca tgaacccctt acgtcttctc 60
 gccacagctc ttgcagctct agctctggct tgcccaacct ttgccttgag tgccacgaat 120
 acgttcgaga atgtgggcgt ggctcgaggat gttcatcctg ccgccggtct ggtagtagtc 180
 gatgggcaga catatcgctt gcccaaccgt gtccaacaac aggactcgcc ggatcatattc 240
 ttggtacgtc agggacagac agtgtctttc tccggcaaac tcaccagcga cctgccagaa 300
 atcgagtcgt tctacattat caagcaggcc cctctcgttc ccttcggatc ggagcagcaa 360
 caatga 366

<210> 421
 <211> 121
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 421
 Arg Thr Thr Asn Leu Ala Gly Arg Arg Gly Glu Met Asn Met Asn Pro
 1 5 10 15
 Leu Arg Leu Leu Ala Thr Ala Leu Ala Ala Leu Ala Leu Ala Cys Pro
 20 25 30
 Thr Phe Ala Leu Ser Ala Thr Asn Thr Phe Glu Asn Val Gly Val Val
 35 40 45
 Glu Asp Val His Pro Ala Ala Gly Leu Val Val Val Asp Gly Gln Thr
 50 55 60
 Tyr Arg Leu Pro Asn Arg Val Gln Gln Gln Asp Ser Pro Val Ile Phe
 65 70 75 80
 Leu Val Arg Gln Gly Gln Thr Val Ser Phe Ser Gly Lys Leu Thr Ser
 85 90 95
 Asp Leu Pro Glu Ile Glu Ser Phe Tyr Ile Ile Lys Gln Ala Pro Leu
 100 105 110
 Val Pro Phe Gly Ser Glu Gln Gln Gln
 115 120

<210> 422
 <211> 303
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 422
 agcctctgtt cgacttcatt gttgctgctc cgatccgaag ggaacgagag gggcctgctt 60
 gataatgtag aacgactcga tttctggcag gtcgctgggt agtttgccgg agaaagacac 120
 tgtctgtccc tgacgtacca agaatatgac cggcgagtcc tggtgttgga cacggttggg 180
 caagcgatat gtctgcccac cgactactac cagaccggcg gcaggatgaa catcctcgac 240
 cagcccaca ttctcgaacg tattcgtggc actcaaggca aaggttgggc aagccagagc 300
 tag 303

<210> 423
 <211> 100
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 423
 Ser Leu Cys Ser Thr Ser Leu Leu Leu Arg Ser Glu Gly Asn Glu
 1 5 10 15

Arg Gly Leu Leu Asp Asn Val Glu Arg Leu Asp Phe Trp Gln Val Ala
20 25 30
Gly Glu Phe Ala Gly Glu Arg His Cys Leu Ser Leu Thr Tyr Gln Glu
35 40 45
Tyr Asp Arg Arg Val Leu Leu Asp Thr Val Gly Gln Ala Ile Cys
50 55 60
Leu Pro Ile Asp Tyr Tyr Gln Thr Gly Gly Arg Met Asn Ile Leu Asp
65 70 75 80
His Ala His Ile Leu Glu Arg Ile Arg Gly Thr Gln Gly Lys Gly Trp
85 90 95
Ala Ser Gln Ser
100

<210> 424
<211> 507
<212> DNA
<213> Pseudomonas aeruginosa

<400> 424
tcgatgggca gacatatcgc ttgcccgaacc gtgtccaaca acaggactcg ccggtcatat 60
tcttggtacg tcaggggacag acagtgtctt tctccggcaa actcaccagc gacctgccag 120
aaatcgagtc gttctacatt atcaagcagg cccctctcgt tcccttcgga tcggagcagc 180
aacaatgaag tcgaacagag gcttcactct catcgagttg atgatcgtcg tagtaatcat 240
cgctattctt gctggtatcg cctaccccag ctacgacgaa tacgtgaagc gcgggaatcg 300
caccgaagga caggcattac tcagcgaagc agccgctact caagagcgct atttttcaca 360
gaacaatact tatatcacta cccaagccga catcggcaag ctgcatatgc gcaacacatc 420
gggcaccaca gtgaagtcct ccacaggcaa atacagcctt accgtcgata cggtagccaa 480
cgacggaggt tatcgcctta tcgctaa 507

<210> 425
<211> 168
<212> PRT
<213> Pseudomonas aeruginosa

<400> 425
Ser Met Gly Arg His Ile Ala Cys Pro Thr Val Ser Asn Asn Arg Thr
1 5 10 15
Arg Arg Ser Tyr Ser Trp Tyr Val Arg Asp Arg Gln Cys Leu Ser Pro
20 25 30
Ala Asn Ser Pro Ala Thr Cys Gln Lys Ser Ser Arg Ser Thr Leu Ser
35 40 45
Ser Arg Pro Leu Ser Phe Pro Ser Asp Arg Ser Ser Asn Asn Glu Val
50 55 60
Glu Gln Arg Leu His Ser His Arg Val Asp Asp Arg Arg Ser Asn His
65 70 75 80
Arg Tyr Ser Cys Trp Tyr Arg Leu Pro Gln Leu Arg Arg Ile Arg Glu
85 90 95
Ala Arg Glu Ser His Arg Arg Thr Gly Ile Thr Gln Arg Ser Ser Arg
100 105 110
Tyr Ser Arg Ala Leu Phe Phe Thr Glu Gln Tyr Leu Tyr His Tyr Pro
115 120 125
Ser Arg His Arg Gln Ala Ala Tyr Ala Gln His Ile Gly His His Ser
130 135 140
Glu Val Leu His Arg Gln Ile Gln Pro Tyr Arg Arg Tyr Gly Ser Gln
145 150 155 160
Arg Arg Arg Leu Ser Pro Tyr Arg
165

<210> 426
 <211> 414
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 426
 gtggggggcg tcggaagagc aggaactgga gggacgggag gagaacatta ccttctcgat 60
 gccaagga ctgcggtca aggccttgta atcggaattt ttgcgcacct gaaaaagccc 120
 ggcttatgcc gggctttgcc ttttcttgt ctcggcgctt tagcgccagc attctgcaac 180
 gctcttcttg cttccagtc gccctttctc gccgttggcg gtcaagggtca ggttgccaca 240
 atcaagatcg ttgaatgcct ggtagcgat aaggcgataa cctccgtcgt tggctaccgt 300
 atcgacggta aggcgtgtatt tgcctgtgga ggacttcact gtggtgcccg atgtgttgcg 360
 catatgcagc ttgccgatgt cggcttgggt agtgatataa gtattgttct gtga 414

<210> 427
 <211> 137
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 427
 Val Gly Gly Val Gly Arg Ala Gly Thr Gly Gly Thr Gly Gly Glu His
 1 5 10 15
 Tyr Leu Leu Asp Ala Gln Gly Thr Ala Gly Gln Gly Phe Val Ile Gly
 20 25 30
 Ile Phe Ala His Leu Lys Lys Pro Gly Leu Cys Arg Ala Leu Pro Phe
 35 40 45
 Ser Cys Leu Gly Ala Leu Ala Pro Ala Phe Cys Asn Ala Leu Leu Ala
 50 55 60
 Ser Ser Pro Ala Phe Leu Ala Val Gly Gly Gln Gly Gln Val Ala Thr
 65 70 75 80
 Ile Lys Ile Val Glu Cys Leu Val Ser Asp Lys Ala Ile Thr Ser Val
 85 90 95
 Val Gly Tyr Arg Ile Asp Gly Lys Ala Val Phe Ala Cys Gly Gly Leu
 100 105 110
 His Cys Gly Ala Arg Cys Val Ala His Met Gln Leu Ala Asp Val Gly
 115 120 125
 Leu Gly Ser Asp Ile Ser Ile Val Leu
 130 135

<210> 428
 <211> 1050
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 428
 tcgacgtcca gccggcctga accgtcggtc gctgcgccct tcccaagcgg ggaggcggt 60
 agcaagggttc attcgtccaa tcaccgcgtc gccacgaga ccgccatgca aatcaaactc 120
 gccaatcccc gcggcttctg cgccggcgtg gatcgcgcca tcgagatcgt caaccgtgcc 180
 ctcgatgtct tcggcccgcc gatctacgtg cgtcacgagg tgggtcacaa caagtctcgtc 240
 gtggacaacc tgcgccagcg cggcgccatc ttcgtcgagg aactcgatca ggtgcccggac 300
 aacgtcatcg tcattctcag cgccacggc gtttcccagg cgtccgcaa ggaagccgag 360
 gggcgcgggc tgaaggtttt cgacgcgacc tgcccgtggt tgaccaaggt gcacatggaa 420
 gtggtgctgt acagccgcga cggccacgaa tgcgtgctga tcgggcatga aggccacccc 480
 gaggtggaag gcaccatggg ccagtacgat gccagcaacg gcggtgccat ctacctggtg 540
 gaggacgagg ccgacgtcgc cgcgctggag gtgcgcaacg ccgaagccct gcactacgtg 600
 acccagacca ccctgtcgat ggacgacacc tcgaagggtca tcgatgcctt gcgcgccaa 660
 ttcccgcaga tccagggggc gcgcaagaac gacatctgct atgccacca gaaccgccag 720
 gatgccgtga aggaactggc cgaccagtgc gacatggtcc tgggtggtggg cagccccaac 780

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agttccaact ccaaccgcct gcgcgaactc gccgagcgca tgggcacgcc ggcctacctg      840
atcgacggcg ccgaggacat gcaacgcggc tggttcgacg gtgtgcgtcg catcggaatc      900
accgcaggcg cctccgcgcc ggaagtgctg gtgcgcggag tgatcgccca gctacgtgag      960
tggggggcgt cggaagagca ggaactggag ggacgggagg agaacattac cttctcgatg     1020
cccaaggaac tgcgggtcaa ggctttgtaa                                     1050

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<210> 429
 <211> 349
 <212> PRT
 <213> *Pseudomonas aeruginosa*

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<400> 429
Ser Thr Ser Ser Arg Pro Glu Pro Ser Val Ala Ala Pro Phe Pro Ser
 1          5          10          15
Gly Glu Gly Gly Ser Lys Val His Ser Ser Asn His Arg Val Ala His
 20          25          30
Glu Thr Ala Met Gln Ile Lys Leu Ala Asn Pro Arg Gly Phe Cys Ala
 35          40          45
Gly Val Asp Arg Ala Ile Glu Ile Val Asn Arg Ala Leu Asp Val Phe
 50          55          60
Gly Pro Pro Ile Tyr Val Arg His Glu Val Val His Asn Lys Phe Val
 65          70          75          80
Val Asp Asn Leu Arg Gln Arg Gly Ala Ile Phe Val Glu Glu Leu Asp
 85          90          95
Gln Val Pro Asp Asn Val Ile Val Ile Phe Ser Ala His Gly Val Ser
 100         105         110
Gln Ala Val Arg Lys Glu Ala Glu Gly Arg Gly Leu Lys Val Phe Asp
 115         120         125
Ala Thr Cys Pro Leu Val Thr Lys Val His Met Glu Val Val Arg Tyr
 130         135         140
Ser Arg Asp Gly His Glu Cys Val Leu Ile Gly His Glu Gly His Pro
 145         150         155         160
Glu Val Glu Gly Thr Met Gly Gln Tyr Asp Ala Ser Asn Gly Gly Ala
 165         170         175
Ile Tyr Leu Val Glu Asp Glu Ala Asp Val Ala Ala Leu Glu Val Arg
 180         185         190
Lys Pro Glu Ala Leu His Tyr Val Thr Gln Thr Thr Leu Ser Met Asp
 195         200         205
Asp Thr Ser Lys Val Ile Asp Ala Leu Arg Ala Lys Phe Pro Gln Ile
 210         215         220
Gln Gly Pro Arg Lys Asn Asp Ile Cys Tyr Ala Thr Gln Asn Arg Gln
 225         230         235         240
Asp Ala Val Lys Glu Leu Ala Asp Gln Cys Asp Met Val Leu Val Val
 245         250         255
Gly Ser Pro Asn Ser Ser Asn Ser Asn Arg Leu Arg Glu Leu Ala Glu
 260         265         270
Arg Met Gly Thr Pro Ala Tyr Leu Ile Asp Gly Ala Glu Asp Met Gln
 275         280         285
Arg Gly Trp Phe Asp Gly Val Arg Arg Ile Gly Ile Thr Ala Gly Ala
 290         295         300
Ser Ala Pro Glu Val Leu Val Arg Gly Val Ile Ala Gln Leu Arg Glu
 305         310         315         320
Trp Gly Ala Ser Glu Glu Gln Glu Leu Glu Gly Arg Glu Glu Asn Ile
 325         330         335
Thr Phe Ser Met Pro Lys Glu Leu Arg Val Lys Ala Leu
 340         345

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<210> 430

<211> 489
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 430
 aggccacccc gaggtggaag gcaccatggg ccagtagcat gccagcaacg gcggtgccat 60
 ctacctggtg gaggacgagg ccgacgtcgc cgcgctggag gtgcgcaagc ccgaagccct 120
 gcactacgtg acccagacca ccctgtcgat ggacgacacc tcgaagggtca tcgatgccct 180
 gcgcgccaag ttcccgcaga tccagggggc gcgcaagaac gacatctgct atgccaccca 240
 gaaccgccag gatgccgtga aggaactggc cgaccagtgc gacatggtcc tgggtggtggg 300
 cagccccaac agttccaact ccaaccgcct gcgcgaactc gccgagcgca tgggcacgcc 360
 ggcctacctg atcgacggcg ccgaggacat gcaacgcggc tggttcgacg gtgtgcgtcg 420
 catcggaatc accgcaggcg cctccgcgcc ggaagtgtcg gtgcgaggag tgatcgccca 480
 gctacgtga 489

<210> 431
 <211> 162
 <212> PRT
 <213> Pseudomonas aeruginosa

<400> 431
 Arg Pro Pro Arg Gly Gly Arg His His Gly Pro Val Arg Cys Gln Gln
 1 5 10 15
 Arg Arg Cys His Leu Pro Gly Gly Gly Arg Gly Arg Arg Arg Ala
 20 25 30
 Gly Gly Ala Gln Ala Arg Ser Pro Ala Leu Arg Asp Pro Asp His Pro
 35 40 45
 Val Asp Gly Arg His Leu Glu Gly His Arg Cys Pro Ala Arg Gln Val
 50 55 60
 Pro Ala Asp Pro Gly Ala Ala Gln Glu Arg His Leu Leu Cys His Pro
 65 70 75 80
 Glu Pro Pro Gly Cys Arg Glu Gly Thr Gly Arg Pro Val Arg His Gly
 85 90 95
 Pro Gly Gly Gly Gln Pro Gln Gln Phe Gln Leu Gln Pro Pro Ala Arg
 100 105 110
 Thr Arg Arg Ala His Gly His Ala Gly Leu Pro Asp Arg Arg Arg Arg
 115 120 125
 Gly His Ala Thr Arg Leu Val Arg Arg Cys Ala Ser His Arg Asn His
 130 135 140
 Arg Arg Arg Leu Arg Ala Gly Ser Ala Gly Ala Arg Ser Asp Arg Pro
 145 150 155 160
 Ala Thr

<210> 432
 <211> 951
 <212> DNA
 <213> Pseudomonas aeruginosa

<400> 432
 ctgggcgatc actccgcgca ccagcacttc cggcgcggag gcgcctgcgg tgattccgat 60
 gcgacgcaca ccgtcgaacc agccgcgttg catgtcctcg gcgccgtcga tcaggtaggc 120
 cggcgtgccc atgcgctcgg cgagttcgcg caggcggttg gagttggaac tgttggggct 180
 gccaccacc aggaccatgt cgcactggtc ggccagttcc ttcacggcat cctggcggtt 240
 ctgggtggca tagcagatgt cgttcttgcg cggcccctgg atctgcggga acttggcgcg 300
 cagggcatcg atgaccttcg aggtgtcgtc catcgacagg gtggtctggg tcacgtagt 360
 cagggcttcg ggcttgcgca cctccagcgc ggcgacgtcg gcctcgtcct ccaccaggta 420
 gatggcaccg ccgttgctgg catcgtactg gcccatggtg ccttcacct cggggtggcc 480

ttcatgccccg	atcagcacgc	attcgtggcc	gtcgcggctg	tagcgcacca	cttccatgtg	540
caccttggtc	accagcgggc	aggtcgcgtc	gaaaaccttc	aggccgcgcc	cctcggcttc	600
cttgccgacc	gcctgggaaa	cgccgtgggc	gctgaagatg	acgatgacgt	tgtccggcac	660
ctgatcgagt	tcctcgacga	agatggcgcc	gcgctggcgc	aggttggtcca	cgacgaactt	720
gttgtgcacc	acctcgtgac	gcacgtagat	cggcggggccg	aagacatcga	gggcacgggtt	780
gacgatctcg	atggcgcgat	ccacgccggc	gcagaagccg	cggggattgg	cgagtttgat	840
ttgcatggcg	gtctcgtggg	cgacgcggtg	attggacgaa	tgaaccttgc	taccgccctc	900
cccgttggg	aagggcgcag	cgaccgacgg	ttcaggcccg	ctggacgtcg	a	951

<210> 433
 <211> 317
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 433

Leu	Gly	Asp	His	Ser	Ala	His	Gln	His	Phe	Arg	Arg	Gly	Gly	Ala	Cys
1				5					10					15	
Gly	Asp	Ser	Asp	Ala	Thr	His	Thr	Val	Glu	Pro	Ala	Ala	Leu	His	Val
			20					25					30		
Leu	Gly	Ala	Val	Asp	Gln	Val	Gly	Arg	Arg	Ala	His	Ala	Leu	Gly	Glu
			35				40					45			
Phe	Ala	Gln	Ala	Val	Gly	Val	Gly	Thr	Val	Gly	Ala	Ala	His	His	Gln
			50				55				60				
Asp	His	Val	Ala	Leu	Val	Gly	Gln	Phe	Leu	His	Gly	Ile	Leu	Ala	Val
65					70				75						80
Leu	Gly	Gly	Ile	Ala	Asp	Val	Val	Leu	Ala	Arg	Pro	Leu	Asp	Leu	Arg
				85					90					95	
Glu	Leu	Gly	Ala	Gln	Gly	Ile	Asp	Asp	Leu	Arg	Gly	Val	Val	His	Arg
			100					105					110		
Gln	Gly	Gly	Leu	Gly	His	Val	Val	Gln	Gly	Phe	Gly	Leu	Ala	His	Leu
			115				120					125			
Gln	Arg	Gly	Asp	Val	Gly	Leu	Val	Leu	His	Gln	Val	Asp	Gly	Thr	Ala
						135					140				
Val	Ala	Gly	Ile	Val	Leu	Ala	His	Gly	Ala	Phe	His	Leu	Gly	Val	Ala
145					150					155					160
Phe	Met	Pro	Asp	Gln	His	Ala	Phe	Val	Ala	Val	Ala	Ala	Val	Ala	His
				165					170					175	
His	Phe	His	Val	His	Leu	Gly	His	Gln	Arg	Ala	Gly	Arg	Val	Glu	Asn
			180					185					190		
Leu	Gln	Ala	Ala	Pro	Leu	Gly	Phe	Leu	Ala	Asp	Arg	Leu	Gly	Asn	Ala
			195				200					205			
Val	Gly	Ala	Glu	Asp	Asp	Asp	Asp	Val	Val	Arg	His	Leu	Ile	Glu	Phe
	210				215						220				
Leu	Asp	Glu	Asp	Gly	Ala	Ala	Leu	Ala	Gln	Val	Val	His	Asp	Glu	Leu
225					230				235						240
Val	Val	His	His	Leu	Val	Thr	His	Val	Asp	Arg	Arg	Ala	Glu	Asp	Ile
				245					250					255	
Glu	Gly	Thr	Val	Asp	Asp	Leu	Asp	Gly	Ala	Ile	His	Ala	Gly	Ala	Glu
			260					265					270		
Ala	Ala	Gly	Ile	Gly	Glu	Phe	Asp	Leu	His	Gly	Gly	Leu	Val	Gly	Asp
		275					280					285			
Ala	Val	Ile	Gly	Arg	Met	Asn	Leu	Ala	Thr	Ala	Leu	Pro	Ala	Trp	Glu
	290					295					300				
Gly	Arg	Ser	Asp	Arg	Arg	Phe	Arg	Pro	Ala	Gly	Arg	Arg			
305					310					315					

<210> 434
 <211> 321

<212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 434
 ccttcgaggt gtcgtccatc gacaggggtg tctgggtcac gtagtgcagg gcttcgggct 60
 tgcgcacctc cagcgcggcg acgtcggcct cgtcctccac caggtagatg gcaccgccgt 120
 tgctggcatc gtactggccc atggtgcctt ccacctcggg gtggccttca tgcccgatca 180
 gcacgcattc gtggccgtcg cggctgtagc gcaccacttc catgtgcacc ttggtcacca 240
 gcgggcaggt cgcgtcgaaa accttcaggc cgcgccctc ggcttccttg cggaccgcct 300
 gggaaacgcc gtgggcgctg a 321

<210> 435
 <211> 106
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 435
 Pro Ser Arg Cys Arg Pro Ser Thr Gly Trp Ser Gly Ser Arg Ser Ala
 1 5 10 15
 Gly Leu Arg Ala Cys Ala Pro Pro Ala Arg Arg Arg Pro Arg Pro
 20 25 30
 Pro Pro Gly Arg Trp His Arg Arg Cys Trp His Arg Thr Gly Pro Trp
 35 40 45
 Cys Leu Pro Pro Arg Gly Gly Leu His Ala Arg Ser Ala Arg Ile Arg
 50 55 60
 Gly Arg Arg Gly Cys Ser Ala Pro Leu Pro Cys Ala Pro Trp Ser Pro
 65 70 75 80
 Ala Gly Arg Ser Arg Arg Lys Pro Ser Gly Arg Ala Pro Arg Leu Pro
 85 90 95
 Cys Gly Pro Pro Gly Lys Arg Arg Gly Arg
 100 105

<210> 436
 <211> 408
 <212> DNA
 <213> *Pseudomonas aeruginosa*

<400> 436
 caaggttcat tcggtccaatc accgcgtcgc ccacgagacc gccatgcaaa tcaaactcgc 60
 caatccccgc ggcttctgcg ccggcgtgga tcgcgccatc gagatcgta accgtgccct 120
 cgatgtcttc ggcccgcga tctacgtgcg tcacgagggtg gtgcacaaca agttcgtcgt 180
 ggacaacctg cgccagcgcg gcgccatctt cgtcgaggaa ctcgatcagg tgccggacaa 240
 cgtcatcgtc atcttcagcg ccacggcgt ttcccaggcg gtccgcaagg aagccgaggg 300
 gcgcggcctg aagggttttcg acgcgacctg cccgctgggtg accaagggtgc acatggaagt 360
 ggtgcgttac agccgcgacg gccacgaatg cgtgctgac gggcatga 408

<210> 437
 <211> 135
 <212> PRT
 <213> *Pseudomonas aeruginosa*

<400> 437
 Gln Gly Ser Phe Val Gln Ser Pro Arg Arg Pro Arg Asp Arg His Ala
 1 5 10 15
 Asn Gln Thr Arg Gln Ser Pro Arg Leu Leu Arg Arg Arg Gly Ser Arg
 20 25 30
 His Arg Asp Arg Gln Pro Cys Pro Arg Cys Leu Arg Pro Ala Asp Leu
 35 40 45

Arg	Ala	Ser	Arg	Gly	Gly	Ala	Gln	Gln	Val	Arg	Arg	Gly	Gln	Pro	Ala
50						55						60			
Pro	Ala	Arg	Arg	His	Leu	Arg	Arg	Gly	Thr	Arg	Ser	Gly	Ala	Gly	Gln
65					70					75					80
Arg	His	Arg	His	Leu	Gln	Arg	Pro	Arg	Arg	Phe	Pro	Gly	Gly	Pro	Gln
				85					90					95	
Gly	Ser	Arg	Gly	Ala	Arg	Pro	Glu	Gly	Phe	Arg	Arg	Asp	Leu	Pro	Ala
			100					105					110		
Gly	Asp	Gln	Gly	Ala	His	Gly	Ser	Gly	Ala	Leu	Gln	Pro	Arg	Arg	Pro
		115					120					125			
Arg	Met	Arg	Ala	Asp	Arg	Ala									
130						135									